



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

December 9, 2010

**Report of the Volatility Subcommittee C
to the Dairy Industry Advisory Committee**

Members of Subcommittee C are as follows

Members	Affiliation
Jay Bryant	Maryland and Virginia Milk Producers Cooperative Association, Virginia
Timothy Den Dulk	Den Dulk Dairy Farm, LLC, Michigan
Debora Erb	Springvale Farms & Landaff Creamery, LLC, New Hampshire
James Goodman	Northwood Farm, Wisconsin
James Krahn	Oregon Dairy Farmers Association, Oregon
Robert Schupper	Ahold USA Retail, Pennsylvania
Sue Taylor	Leprino Foods Company, Inc., Colorado

Introduction

The Dairy Industry Advisory Committee has defined volatility as the combination of instability and uncertainty.¹ The volatility subcommittee has defined the nature of the volatility of concern as the frequent unpredictable fluctuations in prices that result in detrimental impacts on margins in the supply and demand chain. This chain includes producers, manufacturers and fluid processors, marketers (retailers, food service establishments, and food manufacturers), and consumers. At its extreme, this volatility has the potential to severely impact both supply and demand.

¹ Subcommittee A Final Report, p. 7.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

This report is intended to elaborate on the nature of dairy volatility and present recommendations for policies that will either contribute to reduced volatility or facilitate the management of the risks associated with price and margin volatility.

Outlook

The subcommittee expects dairy markets to remain volatile in the future due to several factors. These include the biological nature of the production systems, stickiness in supply and demand adjustments, interplay with international markets, and budgetary considerations that constrain the implementation of price supports or other policy tools at levels that significantly reduce volatility.

First, the biological nature of the supply sector exposes it to weather events that directly or indirectly affect production. Direct impacts are generally derived from the impact of weather on cow comfort or energy expenditure. For example, milk production typically drops during periods of prolonged extreme heat and humidity. Under the opposite extremes, energy required for body maintenance under extreme cold conditions diverts energy away from milk production and either results in higher feed requirements or reduced production. Weather also indirectly impacts milk production through feed quality, availability and price which, in turn, impacts feeding practices and productivity per cow and drives the supply equation up or down, depending upon the situation. The migration of federal policy from promoting grain surpluses to supporting commodities through biofuels policies in recent years has exacerbated the feed price volatility by increasing the demand and reducing the buffer capacity that historically dampened feed price volatility. Consequently, feed grains price volatility will continue to fuel milk price volatility at the farm level.

Second, supply and demand adjustments are sticky. The capital intensity of the farm sector and the lack of competitive alternative uses for dairy facilities inhibit fluid supply adjustments. High fixed costs place a premium on maximizing utilization of dairy facilities and contributes to a delay in supply adjustment when market signals should otherwise induce contraction. In fact, the immediate response of some dairymen to economic stress is to add cows in an effort to maintain cash flow and absorb overhead. The



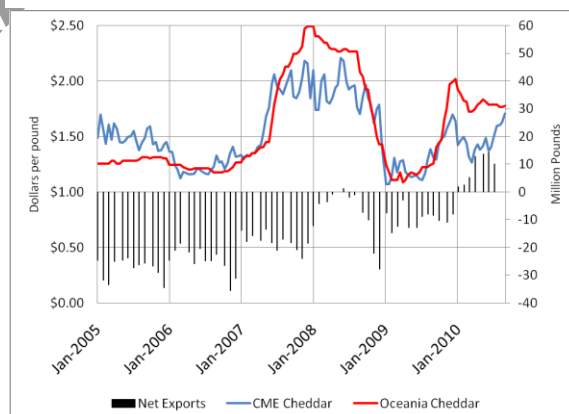
US Department of Agriculture
Dairy Industry Advisory Committee

Subcommittee C
First Draft

1 two year cycle from birth to first lactation also inhibits supply response. Although a limited supply
2 response to high price signals may occur quickly through enriched feed rations, more significant supply
3 responses are delayed given this two year cycle if expansion heifers are not queued up and available to
4 address a shortage. Biological realities also inhibit the adoption of less nutrient dense feed rations as cost
5 cutting measures in periods of poor farm economics. Although financial constraints may eventually force
6 such adjustments, concerns that a cow's production will suffer for the balance of the lactation decreases
7 the probability that dairymen will make feeding adjustments in response to a short term margin squeeze.

8
9 Demand shifts, particularly in the food service and food manufacturing markets, can also be sticky. The
10 majority of hard manufactured products are sold through these channels. Decisions to adjust formulations
11 in ways that necessitate reprinting of boxes or that impact the consumer experience are not done casually
12 but, when done, can impact significant blocks of demand. The cost of consumer testing and packaging
13 changes associated with such a change in combination with concern about future price risk generally
14 leads to a reluctance to reformulate dairy ingredients back into the products from which they are removed.
15 These institutional factors all result in supply and demand adjustments occurring in blocks of volume
16 rather than in a gradual and fluid manner.

Figure 1.
U.S. & Oceania Cheddar prices vs. net exports.





**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 Third, international dairy markets will increasingly
2 impact U.S. dairy markets. A review of the price
3 relationship between the domestic and international
4 markets and import / export data substantiates the
5 interplay between U.S. and international dairy prices.
6 Prior to the implementation of the WTO reforms in
7 the mid-1990s, U.S. exports were minimal. As the
8 reform implementation resulted in reduced export
9 subsidies from the E.U. and increased animal protein
10 demand in developing countries, convergence of U.S.
11 and international prices over the last decade has
12 resulted in increasing U.S. exports and reduced
13 imports. In fact, international prices have exceeded
14 U.S. prices for meaningful periods since 2005. In
15 turn, exports have increased and imports have
16 decreased during these periods. Figures 1 through 3
17 show the U.S. and Oceania prices for cheese, nonfat
18 dry milk / skim milk powder, and butter in
19 combination with the net exports on a monthly basis since January 2005. Net exports are calculated by
20 reducing exports by imports; a negative number is reflective of imports exceeding exports. U.S. exports
21 represented 9.2% of U.S. milk production in 2009.² In the first nine months of 2010, U.S. exports were
22 equivalent to 43 percent of the NDM/SMP produced, 65 percent of the whey proteins, 65 percent of the
23 lactose, 3.6 percent of the cheese and 8.3 percent of the butter.³

Figure 2.
U.S. & Oceania NDM and SMP prices vs. net exports.

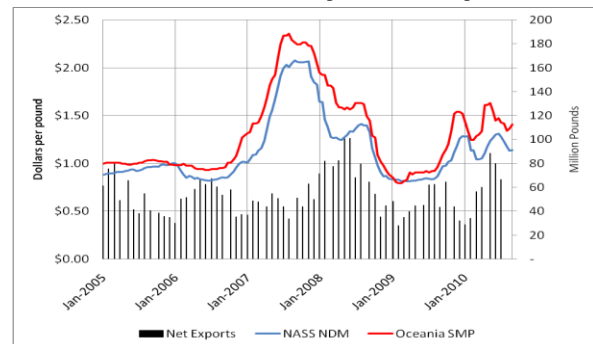
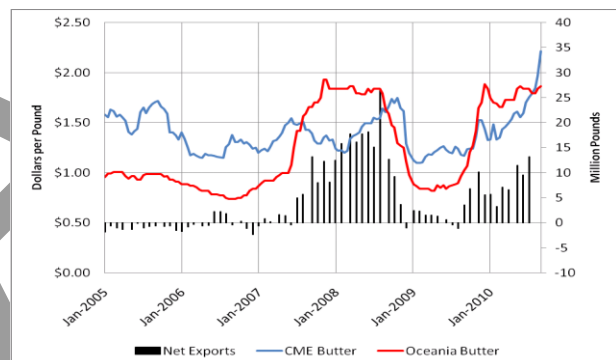


Figure 3.
U.S. & Oceania butter prices vs. net exports.



²USDEC, [Export Trade Data](#), 2009.

³ USDEC, [Summary of U.S. Dairy Exports](#), November 10, 2010.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 The increased participation of the U.S. dairy industry in the world market is contributing to increased
2 volatility for two reasons. First, the supply sectors of several major dairy exporting countries are based
3 upon a grazing model that is particularly vulnerable to weather shocks, such as drought, contributing to
4 international price volatility. When those weather shocks result in drops in their production and
5 exportable product, demand for product from residual suppliers, such as the U.S. increase. Second,
6 although important and significant value-added sales are being developed that are sustainable on a
7 consistent basis, the most significant volume of exports currently is in undifferentiated bulk products,
8 such as bulk skim milk powder, butter, and cheddar cheese. Exports of these bulk commodity products
9 are subject to greater volume variability because the sales tend to be more price than product driven. This
10 places the U.S. into the position of a residual supplier to international markets for these products, and the
11 fluctuations in export volumes adds to the volatility in the U.S. markets. Existing WTO tariff
12 commitments and the compensation required to compensate negatively impacted WTO members if the
13 U.S. were to increase its tariff barriers beyond committed levels make isolation of the domestic market
14 unlikely. Additionally, a protectionist approach that isolates the U.S. markets and significantly raises
15 prices would isolate the greatest growth opportunities for the U.S. dairy industry. While capitalizing on
16 growth opportunities within our strong domestic market will remain core to the success of U.S. producers
17 and processors, significant growth opportunities exist for the U.S. dairy industry outside of the U.S.
18 Ninety-five percent of the world's population lives outside of the U.S., and improving per capita incomes
19 in developing countries will result in significantly higher rates of demand growth than that in the U.S.⁴
20 Although the migration of U.S. dairy exports from largely bulk commodities to differentiated value-added
21 products should result in more consistent exports and reduce the incremental volatility that is currently
22 being introduced into the U.S. market by being a residual supplier, the U.S. market will continue to be
23 subject to the additional volatility through the transition period.

⁴ Suber, Tom. "[The Impact of Globalization on the U.S. Dairy Industry](#)." June 2010. Presentation to the DIAC.



**US Department of Agriculture
Dairy Industry Advisory Committee**

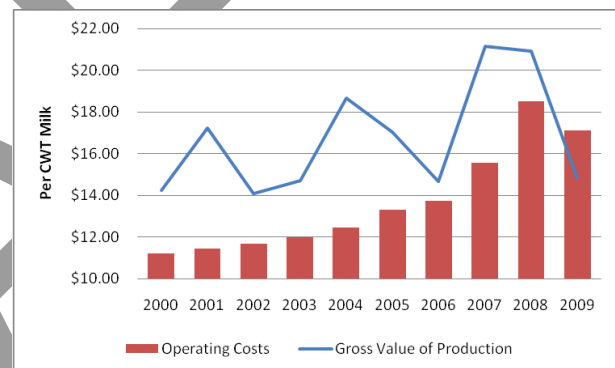
**Subcommittee C
First Draft**

Fourth, government budget constraints limit the potential use of policy levers such as the price support program at the levels required to significantly dampen volatility. Taken on the extreme, history shows that volatility can be eliminated by setting dairy price supports at levels that generate market prices in excess of farm cost of production. However, this policy approach results in significant government outlays (peaking at \$2.6 billion in USDA's 82/83 marketing year) and has undesirable market consequences. Government budget constraints make a product purchase program that incorporates support prices set near or at the farm cost of production politically nonviable.

Volatility of Concern

Volatility discussions stimulated by farm sector concerns often center on milk price volatility but the primary concern to producers is more accurately described as margin volatility. High prices in the context of comparatively higher costs are problematic while lower prices in the context of comparatively lower costs can be adequate. A review of USDA ERS Agricultural Resource Management Survey (ARMS) data for the last decade is instructive in this regard. Figure 4 shows the gross value of production (milk, cattle and other income) and operating costs (total operating costs as defined by ARMS plus hired labor, taxes, insurance and general farm overhead) over the last decade. The margin between the gross value of production and operating costs over the decade ranged from negative \$2.28 (2009) to positive \$6.22 (2004) per cwt. On an individual farm basis, margin volatility is largely driven by the relationship between milk prices and feed prices on dairies that purchase feed and the relationship between milk prices and costs of crop production on dairies that primarily grow their own feed.

Figure 4.
Dairy operating costs vs. gross value of production, 2000 - 2009.



Data source: USDA, ERS Agricultural Resource Management Survey (ARMS).
www.ers.usda.gov/Data/CostsAndReturns/testpick.htm
Operating costs include total operating costs as defined by ARMS plus hired labor, taxes and insurance and general farm overhead. Gross value of production includes milk, cattle, and other dairy-related income.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 Milk and finished product price volatility impact the balance of the marketing chain in different ways.
2 Manufacturers of the products that are included in the regulated milk pricing system (bulk cheddar, butter,
3 nonfat dry milk) are largely insulated from the direct effects of volatility because the minimum regulated
4 milk price is directly calculated from the prices received for these products. However, manufacturers and
5 marketers of these products into the retail sector on a branded basis generally sell at relatively stable
6 prices. The relatively stable sales prices in combination with volatile milk costs result in significant
7 margin volatility. Similarly, manufacturers of other dairy products and food manufacturers using dairy
8 ingredients maintain relatively stable sales prices and, absent a price risk management program to address
9 cost volatility, are subject to significant margin volatility. Food service outlets also tend to maintain
10 stable menu pricing and input price volatility, if left unmanaged, is directly reflected in volatility in their
11 profitability. Price volatility impacts promotion of dairy products and products with significant dairy
12 ingredients in the food service and retail sectors and ultimately impacts consumers and demand.

13
14 The diversity in the various businesses in the marketing chain downstream from producers constrains the
15 ability to find a one size fits all solution to address margins in those businesses. Consequently, the ability
16 to customize the management of price risk in a way that addresses individual business needs is critical in
17 these downstream markets. Ultimately, a single answer is not likely to address the needs of the entire
18 supply and demand chain.

19
20 Policy Solution Parameters

21 As noted, high prices do not ensure farm level profitability and more modest prices do not condemn farms
22 to a lack of profitability. Rather, it is the relationship between revenues and costs that drives farm
23 profitability. Therefore, margin volatility is the most concerning aspect of volatility to farmers. In
24 contrast, robust price risk management tools are critical to the continued development of demand for dairy
25 products through the balance of the marketing chain. Therefore, the subcommittee recommends that
26 policy solutions that are developed to address the farm margin volatility problem not be detrimental to the
27 ability to manage the finished product price risk. Additionally, the subcommittee does not believe that
28 policy solutions should significantly intrude upon the market-driven relative competitive position of



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 dairymen vis-a-vis other dairymen. Full consideration should be given to managing the risks associated
2 with price as well as margin volatility through market-based and/or public policy solutions.

3
4 Acute short term pressure on dairy farm margins sometimes generates a push for short term policy
5 interventions that result in greater downward pressure on farm margins over the long term. A prime
6 example of this is a temporary increase in the support price. USDA and politicians understandably want
7 to be responsive to requests for help in periods of farm stress but it is important to recognize that
8 additional support may impede a supply adjustment and may, in fact, result in lower sector profitability
9 over the long term. USDA should support long term dairy policy reforms in the Farm Bill that result in
10 less need for ad hoc efforts to patch national dairy markets and drive a healthier and more resilient
11 industry.

12
13 Policy adjustments that contribute to reduced volatility or that facilitate the management of volatility and
14 a viable, long-term safety net should be centerpieces of the 2012 Farm Bill debate. The subcommittee
15 recognizes that the dairy industry is not alone in terms of the sector concerns it hopes to address through
16 Farm Bill policies. Many commodities are currently debating the appropriate balance of Federal
17 programs, such as insurance and/or payments, that will best meet the challenges faced by their producers.
18 Tight budgetary constraints will complicate matters considerably. Congressional pay-go rules, a smaller
19 CBO baseline, budget reconciliation, and a looming Federal budget deficit will mean that the 2012 Farm
20 Bill will be written under much tighter fiscal obligations than recent omnibus Farm Bills. Keeping this in
21 mind, the subcommittee understands the need to prioritize programs and options that would most
22 effectively assist producers in dealing with volatility and promoting solid risk management strategies.

23
24 In that context, the subcommittee unanimously recommends three proposals (Farm Savings Accounts,
25 Risk Management Margin Lines of Credit and continuation of export market development assistance
26 through the Market Access Program and Foreign Market Development programs) that we believe could
27 help dairy farmers manage price and margin risk or contribute to reduced volatility by transitioning us
28 from a residual to a consistent supplier to the world market. These three proposals are believed to have de
29 minimus budget costs. The subcommittee is also examining a range of other policy options, including



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 safety net programs (price supports, MILC and margin insurance) and supply management. Given the
2 significance of these within the overall dairy programs and the prioritization that will be necessary in the
3 context of budget constraints, the subcommittee believes that its greatest contribution to the discussion
4 regarding these policies is to provide an elaboration of the policy options and implications for
5 consideration by the full committee.

6
7 Several economic analyses have been presented to the Committee for review and have been cited in this
8 report. These analyses are useful to better understanding potential outcomes of various policy options.
9 However, it is important to note that these analyses are based upon econometric models. Such 'models
10 cannot be "validated" (shown to be true representations of the world they model) because all models are a
11 simplification of reality.⁵ As such, a model is evaluated using a range of criteria to determine whether it
12 is adequate for its stated purpose. "A model (or theory) can never truly be confirmed unless it is made so
13 broad as to include every possibility."⁶ That means that every producer or processor decision cannot be
14 captured in these models, and modelers must assume how actors would behave under various economic
15 circumstances. The assumptions, scenarios, and data used to model policy options are important to
16 consider, as they influence the model output. These studies are important as guides but must be evaluated
17 in the context of the assumptions used.

18
19 Policies Recommended by Volatility Subcommittee

20 Farm Savings Accounts (FSAs)

21 As one tool to address farm margin volatility, the subcommittee recommends amending the tax laws to
22 provide for farm savings accounts. These savings accounts can provide a platform through which farmers
23 can defer taxable income in profitable years by placing funds in a qualified account. This tool is likely to

⁵ Nicholson, C. and M. Stephenson. "[Initial Analysis of the Impacts of a Farm Savings Account Program on Price Volatility](#)." September 2010. DIAC Paper. p. 13.

⁶ Greene, William. Economic Analysis – Fifth Edition. New Jersey: Pearson Education, 2003. pp. 3.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 reduce the level of investment in expansion and other capital projects that are made with the objective of
2 avoiding tax liabilities under current tax law. This reduction in tax-avoidance driven investment in
3 profitable years should reduce the production surge that typically contributes to a deeper down cycle after
4 profitable years. This will benefit all producers, including those who do not directly participate in FSAs.
5 Additionally, funds that have been deposited will be available to assist producers at their discretion.
6 Funds, including interest, withdrawn from the farm savings accounts would be taxed at the rate applied in
7 the year in which the funds are withdrawn.

8
9 An ancillary but important benefit of the farm savings accounts is that producers will more likely have a
10 reserve cushion of cash available to weather low margin years. This cushion can relieve pressure on
11 USDA for short-term crisis intervention.

12
13 With those considerations in mind, the volatility subcommittee recommends the following provisions
14 related to the farm savings accounts:

- 15 ➤ No government match.
- 16 ➤ No limits on the dollars deferred per year.
- 17 ➤ Require money to remain in account a minimum of six months and allow withdrawal at account-
18 holder's discretion thereafter.
- 19 ➤ Tax deposits and interest upon withdrawal from the account.

20
21 The subcommittee believes that the rules proposed above would provide a tool that benefits participants
22 through the development of a tax deferral mechanism that could result in reserve capital to address margin
23 down turns. Additionally, the program benefits non-participants and smaller contributors by reducing
24 tax-avoidance driven investment that tends to contribute to market collapse. Finally, the program would
25 have minimal cost to the government.

26
27 The concepts behind FSAs are not altogether new. Variations that included matching funds from the
28 government were explored as potential policy solutions in 2002 and 2007 Farm Bill debates as
29 alternatives to loan and other traditional crop programs but were ultimately rejected by Congress. These



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 programs have also been discussed in academic literature. The subcommittee has not identified studies
2 based upon the same provisions as recommended by the subcommittee, but believes it is informative to
3 review studies regarding the broader FSA concepts.

4
5 The following two programs have been presented as alternatives to the current suite of safety net
6 programs for other commodities and have been the subject of academic research⁷:

7 a) Farm and Ranch Risk Management Accounts (FARRM) -- would provide a tax deferral
8 incentives, require positive net farm income to qualify, and limit deposits to 20% of net farm income;
9 and

10 b) Counter-Cyclical Accounts (CCAs) -- provide direct government support through a
11 government savings match, require average gross farm income greater than \$50,000 or be limited
12 resource farm, and allow a maximum deposit of 2% of gross income with a \$5,000 match.

13 Both accounts also have set conditions under which the funds can be drawn. Money in CCAs can only be
14 removed when annual income falls below 90% of its 5-year average. Money from FARRM accounts can
15 be withdrawn at any time but must be withdrawn within five years.

16
17 Several studies have examined the potential use and impact of FSAs on dairy farms. Enahoro and Gloy⁸
18 (2006) analyzed five years (1997-2002) of data from 142 New York dairy farms to determine the
19 effectiveness of FARRM and CCA accounts. The paper examines the 1) availability of funds to deposit
20 in farm savings accounts; 2) extent to which farmers could divert cash from investing activities to the
21 savings programs; 3) the effects that the savings programs have on year-to-year variability of farm
22 household income; and 4) how the accounts would impact farm financial conditions.

⁷ Gloy, B. and A. Novakovic. "[Farm Savings Accounts as a Tool for Dairy Farm Risk Management](#)." April 2010. Presentation to USDA DIAC.

⁸ Enahoro, D. and B. Gloy. "[Examining the Potential Benefits of Federally Subsidized Farm Savings Accounts for Dairy Farmers](#)." July 2006. Selected Paper for 2006 American Agricultural Economics Association (AAEA) Annual Meeting, Long Beach, CA.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 They find that most farms were eligible for at least one deposit in five years under either account. The
2 model analysis estimated average investments at the end of the five years in FARRM accounts at \$9,726
3 to \$42,289 depending upon the income measure used to determine deposit capabilities (i.e. cash balances,
4 net earnings, cash flow coverage margin, adjusted investment). This range compares to \$5,861 to
5 \$17,582 in the CCAs. Despite the government match in the CCAs, larger assets balances were
6 accumulated in the FARRM accounts due to more frequent removals from CCA accounts related to
7 income indexing. Tax deferrals and increased withdrawals could also impact these balances. Enahoro
8 and Gloy ultimately find that neither account would be funded at its full level because of cash flow
9 challenges on individual operations.

10
11 A 2006 ERS study, “Whole-Farm Approaches to a Safety Net⁹,” examined farm savings accounts,
12 including FARRM and CCAs, and revenue insurance as options to provide a “whole farm” safety net to
13 U.S. agricultural producers. The report points out farm savings accounts are an attractive option because
14 they could be applied to more agricultural enterprises rather than being restricted to the traditional
15 program commodities. The following table shows participation levels and costs of the two proposed
16 programs and the Individual Risk Management Account (IRMA) that would include both a tax deferral
17 option and a matching deposit credit. The outcomes show that the tax deferrals come at a much smaller
18 government cost, and this is likely due to the fact that a very low percent of farmers report taxable income
19 each year, either due to lack of profitability or through the use of tax avoidance strategies. For example,
20 70 percent of farm sole proprietorships reported losses for tax purposes in 2004, while about half of all
21 farm partnerships and small business corporations report losses.¹⁰ (Note – “Table 2” below includes all
22 agricultural producers, not just dairy.)
23

⁹ Dismukes, R. and Durst, R. “[Whole-Farm Approaches to a Safety Net.](#)” 2006. USDA-ERS Economic Information Bulletin 15.

¹⁰ Durst, Ron. “[Federal Tax Policies and Farm Households.](#)” May 2009. USDA-ERS Economic Information Bulletin 54.



US Department of Agriculture
Dairy Industry Advisory Committee

Subcommittee C
First Draft

Table 2
Estimated annual eligibility, potential deposits, and benefits vary by proposed income-stabilization account program

Proposed program	Eligible farmers ¹		Potential deposits ²	Potential benefits to farmers	
				Tax deferral	Matching deposits
	<i>Number</i>	<i>Percent</i>		<i>-----Billion dollars-----</i>	
FARRM Accounts	1,088,546	37	3.5	0.9	n/a
Counter-Cyclical Accounts	688,943	24	3.2	n/a	1.6
Individual Risk Management Accounts	2,714,000	93	5.4	0.7	2.7

¹Number of farmers is the number of taxpayers reporting farm income or loss.

²Farmer deposits plus Government matching deposits.

n/a = not applicable.

Source: ERS analysis of 2000 Internal Revenue Service tax data.

The study found that FSAs encourage farmers to manage risk, but the level of risk protection would ultimately depend on the reserves in the accounts. Those reserves would depend upon farmers' participation, their levels of income, and their cash flow capacities. Outcomes could include concentration of benefits or lack of adequate balances depending on the program's design.

Dismukes and Durst also examine savings account programs in other countries. Australia instituted a savings account scheme that allowed producers to deduct the deposited amount from their taxes and defer those taxes until the year in which the savings are withdrawn. Australian experience shows that only 10 percent of dairies and 15 percent of all farms utilized these accounts. Those who participated accumulated large balances and tended to be the larger operations. By the end of 2002, nearly 40,000 accounts existed averaging about \$48,000. In Canada, the experience with FSAs resulted in some farmers carrying large balances, while others – generally small farms – carried little or no balances. The Canadian Net Income Stabilization Account (NISA) program provided significant incentives to encourage deposits, including a government match and a 3 percentage point interest rate bonus on account balances. The bonus interest rate proved to be too lucrative and became an obstacle to farmers withdrawing funds in low income years. NISA was replaced with the Canadian Agricultural Income Stabilization (CAIS) program that combines the FSA and disaster assistance. Under this system the participant does not receive a contribution until he



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 or she experiences a drop in net farm income but still receives the interest rate bonus. That makes the
2 program work somewhat like income insurance, although, producers do not pay a risk-based fee. The
3 producer's deposit actually acts like a fee.

4
5 These two studies show that the parameters of the savings account program matter a great deal in the
6 success of the program. Tax deferral options would seem to incite more savings than those with stricter
7 parameters like earning positive net farm income before a deposit can be made. The tax deferral option
8 should come at a small cost to the government based on the ERS' findings.

9
10 In a paper presented to the DIAC, Stephenson and Nicholson (2010)¹¹ examined the impacts of FSAs on
11 price volatility. Their analysis was based upon FSAs with a 1:1 government match on contributions up to
12 \$10,000. They assume a second tier of support with a government match of \$1 for every \$4 contributed
13 by a producer on the increment between \$10,000 and \$40,000. Thus, a farmer could receive an additional
14 \$7,500 if he contributed \$40,000 to his account. They also assume that farms earning more than
15 \$750,000 per year in NFOI would not qualify for the government match. And finally, they allow farms to
16 withdraw amounts equal to the difference between current NFOI and a three-year rolling average, when
17 negative, subject to its limit on available funds.

18
19 Stephenson and Nicholson also make assumptions on producer decision making. For example, farms
20 would contribute a portion of earnings to an FSA when the current net farm operating income (NFOI) was
21 greater than a three-year rolling average of NFOI. They assume the contribution will be made monthly
22 and is not influenced by the matching amount. Second, they assume that farms make production
23 decisions based upon NFOI net of contributions in years in which they make contributions and based
24 upon NFOI plus withdrawals in years in which they make withdrawals. Finally, the authors do not adjust

¹¹ Nicholson, C. and M. Stephenson. "[Initial Analysis of the Impacts of a Farm Savings Account Program on Price Volatility](#)." September 2010. DIAC Paper.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 for differences in tax rates on contributed and withdrawn funds and assume the elimination of MILC and
2 DPPSP.

3
4 The study finds that savings accounts do have a positive impact on reducing price variability and the
5 overall absolute deviation indicator of variation. For scenarios with shocks, the reduction is comparable
6 to supply management programs that have been presented to the subcommittee. The Stephenson and
7 Nicholson study shows that a savings account program can reduce price volatility. Therefore, even if
8 participation appears to be concentrated in larger farms, all producers ultimately would benefit from the
9 program.

10
11 However, the study finds that the matching portion would have to ultimately be reduced in order to fit the
12 program within the government limitations for the dairy portion of the 2012 Farm Bill. It does not appear
13 that a stand-alone savings account program with government matching as assumed in their study could be
14 added to the current suite of dairy programs at current funding levels.

15
16 The subcommittee's recommendations suggesting no government matching funds should address
17 budgetary concerns and minimize the need to offset the establishment of FSAs with elimination of
18 another dairy program. Because the subcommittee believes that dairy farmers largely manage their tax
19 liability down through forward purchases or expansion, this proposal should have minimal impact on tax
20 collections. And, finally, the lack of a government match facilitates greater flexibility around deposits
21 and withdrawals that should allow producers to tailor the accounts to their individual needs.

22
23 Risk management margin lines of credit

24 Given the inherent price and margin volatility that will continue to be associated with dairy markets in the
25 context of volatile farm input prices and increased participation in the global market, risk management
26 tools available through the futures markets will play increasingly critical roles in managing price and
27 margin risk for farmers, manufacturers and end users. These tools can be used in a variety of ways, such



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 as locking in a margin or a price through the use of futures contracts or protecting against unfavorable
2 price levels through the use of options contracts.

3
4 In contrast with other segments of agriculture in which robust futures markets have existed for decades,
5 use of futures to manage price and margin risk in the dairy industry has largely been limited to the period
6 since cash-settled dairy futures were introduced in 1997. Several factors, including lack of historical
7 experience, minimum contract sizes that exceed some individual farm's production, complexity, and
8 margin requirements limit direct participation by farms in futures market risk management activities.
9 Many of these obstacles can be overcome through offerings of forward price programs by the cooperative
10 or proprietary buyers of milk from producers. The buyers can bundle volumes of milk that are smaller
11 than the minimum future or option contract size in order to facilitate risk management on behalf of their
12 small producers. Additionally, the risk management activity of the producers can be directly incorporated
13 into producer payments, eliminating the need for producers to track separate futures contract settlements.
14 And perhaps most significantly, these first buyers of milk can manage the margin calls on behalf of
15 producers, eliminating an often time-consuming and stressful component of direct hedging by producers.

16
17 Margin in the context of the futures markets is the amount of money that must be on deposit by both
18 buyers and sellers of futures contracts to ensure performance of the terms of the contract. It is one of
19 several mechanisms that the exchanges use to address the credit risk that might otherwise exist across
20 anonymous counterparties. Initial margin is required upon initiation of a buy or sell position, and further
21 margin may be required over the lifetime of a futures position when the price of the futures contracts held
22 by a party is unfavorable to the current futures market prices. Maintenance margin is the minimum equity
23 that must be maintained for each contract in a customer's account subsequent to the deposit of the initial
24 margin. Minimum initial and maintenance margins are set by the exchange for each market but individual



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

brokerage firms may require margin deposits at higher levels than the exchange minimums.¹² The margin requirements for the milk contracts traded on the CME were recently changed and can be seen in the following table:¹³

Name	Effective Date	Initial Rate per Contract	Maintenance Rate per Contract
Class III Milk Future	Dec-10	\$ 1,080	\$ 800
Class IV Milk Future	Nov-10	\$ 810	\$ 600
Class IV Milk Future	Jan-11	\$ 1,080	\$ 800
Class IV Milk Future	May-11	\$ 1,350	\$ 1,000

A party's margin account is adjusted daily based upon the difference in the value of the futures contracts being held and the daily settlement price, a process that is referred to as "mark to market." For example, if a dairyman sold a Class III milk future contract for \$15 and the daily settlement price for that contract is \$18, he would have been required to wire transfer the \$3 difference to his broker in order to maintain the minimum maintenance margin account. If, in contrast, the daily settlement price for that contract is \$12, he would have been credited the \$3 difference in his margin account. The call from the brokerage firm to a customer to bring margin deposits up to a required minimum level are referred to as margin calls. This is a simplified example; in actuality, the adjustments in the margin account happen daily.

Margin calls are obstacles to direct dairy producer hedging because of the logistical challenge of having to monitor their positions daily and arrange for a transfer of funds to their broker daily when they have sold futures at a price below the current price in an upwardly moving market. The logistical and emotional stress of responding to margin calls is sufficient to keep many producers from managing their milk price risk directly.

¹² Plourd, Phil. From Price Taker to Price Maker. Coffee, Sugar & Cocoa Exchange, 1997. Pp 115-122.

¹³ CME website. [CME Margin Requirements](#)



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 The preference for forward contracts in which the producer locks a price with the cooperative or
2 proprietary purchaser of their product over taking direct positions on the futures market is not unique to
3 dairy. Most producers of grains prefer forward contracts to futures contracts, in part, because of the cash
4 required for margin calls. However, the increased grain market volatility has increased the exposure per
5 contract at the same time that more producers are interested in forward pricing, resulting in a substantial
6 increase in the working capital required in order to cover forward contract positions on behalf of
7 producers. As an example, a typical grain elevator in Nebraska could be faced with a \$3 – 5 million
8 margin call each day when the futures markets make limit moves higher. The significantly higher and
9 more volatile prices in recent years as well as the working capital required to manage risk associated with
10 offering cash forward contracts has resulted in some grain merchants restricting or eliminating these
11 contracts, thereby limiting a risk management strategy at a time when farmers need it most.¹⁴

12
13 As already noted, programs offered by milk buyers, both cooperative and proprietary, that overcome the
14 obstacles to risk management are critical to increasing the utilization of risk management by producers.
15 However, the ability for many entities to offer these programs that facilitate producer risk management
16 could be constrained by margin call encroachment on credit facilities. Even having only half of their
17 producers manage price or margin risk on half of their milk could generate millions of dollars in potential
18 margin calls per day for some cooperatives. This working capital may be out of reach for some, even
19 though the margin costs are not true operating costs of the cooperative or proprietary buyer of milk.
20 Rather, the margin account value (plus or minus) is reflected in the milk price paid to the producers who
21 contracted for the forward price or margin. As a result, the risk associated with default on the debt
22 associated with the margin calls is minimal.

¹⁴ Mark, D. et al. “[Price Risk Management Alternatives for Farmers in the Absence of Forward Contracts with Grain Merchants](#).” Choices (American Agricultural Economics Association). 2nd Quarter 2008 – 23(2), pp. 22-25.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 The subcommittee recommends that the Farm Services Agency establish a credit mechanism to facilitate
2 risk management margin lines of credit to first buyers (cooperative or proprietary) of milk. These lines of
3 credit should be available through the direct lending or credit guarantee program. Funds that could be
4 borrowed against the line would be restricted to funds required to cover margin associated with bonafide
5 risk management activity documented by contracts between the first buyers and producers of raw milk.

6 Export Market Development

7 The subcommittee recognizes the importance of international market development to the future of the
8 U.S. dairy industry. However, the industry's current role as largely a residual supplier of bulk
9 commodities is leading to increased volatility in the U.S. markets. The transition to becoming a
10 consistent supplier of value-added dairy products should provide more consistent and resilient export
11 volumes, thereby reducing the incremental price volatility currently contributed by our volatile export
12 volumes.

13 According to the Innovation Center for U.S. Dairy and U.S. Dairy Export Council, globalization of the
14 dairy industry will increase in the coming years and "inaction will lead to a less competitive U.S. dairy
15 industry."⁴ Ample evidence has been presented to the committee that the U.S. is uniquely positioned to
16 take advantage of these opportunities. The export market has been especially important to the U.S dairy
17 industry price recovery in 2010.

18 The subcommittee recommends that USDA maintain and even expand its trade export development
19 capacity. Maintaining USDA programs like the Market Access Program (MAP) and the Foreign Market
20 Development (FMD) programs administered by the Foreign Agriculture Service (FAS) that fund
21 activities that introduce U.S.-produced dairy products to key export markets are important components of
22 the budgets of organizations like US Dairy Export Council.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 Recently, the National Commission on Fiscal Responsibility and Reform released its findings¹⁵ on areas
2 reconciling the budget deficit through policy and fiscal reform. Spending suggestions covered a range of
3 Federal Agencies and programs. Changes to agricultural programs included spending reductions for
4 MAP. This recommendation is in direct conflict with the Administration's goal of doubling exports 2015.
5 Programs like MAP actionize the Administration's goal by facilitating export enhancement. MAP is a
6 sound investment in U.S. agriculture's global competitiveness and results in increased U.S. exports.
7 Considering new export goals and the benefit to the U.S. dairy industry, MAP funding should be
8 maintained.

9
10 **Other Policies for Further Consideration**

11 The subcommittee is also examining a range of other policy options, including safety net programs (price
12 supports, MILC and margin insurance) and variations on supply management. Given the significance of
13 these within the overall dairy programs and the prioritization that will be necessary in the context of
14 budget constraints, the subcommittee believes that its greatest contribution to the discussion regarding
15 these policies is to provide an elaboration of the policy options and implications for consideration by the
16 full committee. The following sections are the subcommittee's attempt to do so.

17
18
19 **Safety Net Programs**

20 The subcommittee unanimously agrees that it is important to maintain a farm safety net as a part of the
21 2012 Farm Bill. The primary programs that are typically classified as safety net programs are the Dairy
22 Product Price Support Program (DPPSP), countercyclical payments (currently Milk Income loss
23 Contracts/MILC) and margin insurance programs (have not previously received farm bill funding).

¹⁵ The National Commission on Fiscal Responsibility. "[The Moment of Truth](#)." December 2010. White House Release.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

Dairy Product Price Support Program

The DPPSP is described in the Subcommittee A report and the basic parameters will not be elaborated in this report. The DPPSP and its predecessor, the Dairy Price Support Program, have long been a cornerstone of U.S. dairy policy. At times, the support prices have been set at levels at or above the farm cost of production, stimulating surplus. More recently, however, the price has been set well below the farm cost of production at a level that would be considered a safety net against catastrophic situations.

National Milk Producers Federation has criticized the DPPSP¹⁶ for the following:

- It reduces total demand for U.S. dairy products and dampens our ability to export, while encouraging more foreign imports into the U.S.
- It acts as a disincentive to product innovation.
- It supports dairy farmers all around the world and disadvantages U.S. dairy farmers.
- It isn't effectively managed to fulfill its objectives.
- The price levels it seeks to achieve aren't relevant to farmers in 2010.

While Milt Madison pointed out the efficiency of the product purchase approach in terms of potential to increase farm income by greater than the government outlays, he also acknowledged the following implications of DPPSP in his presentation to the DIAC:¹⁷

- While purchases boost milk prices in the short term, USDA must store and dispose of a perishable product that if allowed to enter commercial channels will lower producer milk prices.
- DPPSP may discourage ingredient use by food manufacturers and stifle new dairy product development.

¹⁶ Kozak, Jerry. "[Foundation for the Future](#)." April 2010. Presentation to DIAC.

¹⁷ Madison, Milton. "[Farm Service Agency Programs](#)." April 2010. Presentation to DIAC.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

- Imports may substitute for higher-priced domestically produced product.

And, finally, the Innovation Center for US Dairy identified the Dairy Price Support Program as the highest priority item that needs to be reformed in order to transition the U.S. industry into being a consistent exporter.⁴

Given all of these concerns with the existing price support program, it is prudent to review alternative safety net mechanisms.

Milk Income Loss Contracts (MILC)

The counter-cyclical payment program, MILC, is described in the Subcommittee A report and the basic parameters will not be elaborated in this report. Most of the criticism of the MILC program is related to the payment limitations that result in disparate benefits to producers, depending upon size.

Milton Madison presented the following information and made the following observations related to MILC:¹⁶

- Traditional dairying states (with smaller farms) receive the bulk of MILC payments:
 - 54 percent of MILC payments for FY 2009 production went to producers in 6 states: NY, VT, PA, WI, MI, and MN...
 - ...which account for 35% percent of the milk supply.
- California received only 12 percent of MILC payments although it produced 22 percent of milk supply.
- MILC payments directly benefit milk producers but some more than others due to the limit on production eligible for payment.
- Economic theory suggests that direct payments may lead to higher milk production when milk prices fall, prolonging price recovery.
- To the extent that MILC payments limit the response to low milk prices by smaller producers, the largest producers may be worse off since their payment production is capped.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

Given these concerns and observations, it is similarly prudent to review alternative safety net programs.

Margin Insurance

Margins (the relationship between income and expense) are a more critical factor in farm profitability and viability than are absolute price levels. As a consequence, replacing the dairy product price support program and the milk income loss contract (MILC) program with a margin insurance program warrants further consideration. On the surface, a margin insurance program more directly addresses farm viability policy objectives in a size-neutral way than do the existing programs.

Thus far, two margin insurance options have been presented to the DIAC. Livestock Gross Margin Insurance for Dairy (LGM-Dairy) is a relatively new insurance product that insures a farm's selected level of income over feed costs. Recently, USDA has announced steps to offer some premium subsidy for participating producers and to make the program easier to use and understand. National Milk Producers Federation (NMPF) has proposed the Dairy Producer Income Protection Program (DPIPP) as a margin insurance program with a base margin guarantee.

LGM-Dairy

Livestock Gross Margin Insurance for Dairy (LGM-Dairy) is a risk management program managed by USDA's Risk Management Agency (RMA) to help dairy producers deal with margin risk associated with adverse moves in income over feed costs). The program was approved by RMA in 2007. LGM-Dairy is similar to hedging with a bundled options strategy, where a price floor is set on milk prices and a price ceiling is set for feed costs. The goal of this program is to protect producer margins from falling below contracted levels. Producers retain the benefit of higher market-driven margins when available.

LGM offers producers the opportunity to insure the difference between the price received for Class III milk and the cost inputs in soybean meal and corn equivalents. Producers can customize the feed balance to their own ration or use default feed values. CME dairy, corn, and soybean meal prices are used as



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 price discovery tools for the program. Interested producers must purchase LGM-Dairy coverage on the
2 last business Friday of each month, so they only have twelve sign-up opportunities per year. Production
3 can be insured for the subsequent eleven months but insurance does not have to be purchased for all
4 months. Originally, LGM-Dairy offers dollar-denominated deductibles in \$0.10 increments from \$0 to
5 \$1.50. The policies can be designed to cover an individual's desired production level, making the
6 program accessible to producers who feel they are too small to hedge using futures and options tools.
7

8 LGM-Dairy has experienced slow adoption rates due to program complexity, lack of insurance carriers,
9 high cost of policies, lack of a Federal subsidy, requirement to have full premium upfront, requirement for
10 verification of target marketings, and general inexperience of dairy producers with margin insurance
11 concepts. In reinsurance year 2009, only 40 policies were sold that earned a premium.¹⁸ Over 400,000
12 cwt. of milk was covered by the program accounting for \$4.7 million liabilities. Data from the first three
13 and a half months of 2010 has shown a marked increase in the use of the program. From January 1 to
14 March 18, 2010, 92 policies were sold that earned a premium covering 1.38 million pounds of milk and
15 \$18.3 million in liability.
16

17 RMA seems well-aware of the challenges and has made strides to educate producers on how to use LGM-
18 Dairy. Through a grant from RMA, University of Wisconsin-Madison has developed a variety of
19 extension resources in the form of web-based electronic premium calculators, feed cost estimators, and
20 optimal strategy analyzers to assist producers in making decisions regarding the program. Education
21 among crop insurance agents has dramatically increased the number of providers across the country.
22

¹⁸ Witt, C. ["Dairy Options Pilot Program and Dairy Livestock Gross Management Program."](#) April 2010. RMA presentation to DAIC.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

On October 26, 2010, RMA made an announcement regarding important changes designed to make LGM-Dairy more user-friendly.¹⁹ For policies sold after December 17, 2010, premiums will be due at the end of the coverage period rather than at the beginning. This allows the premium to be deducted from the indemnity.²⁰ Higher deductible levels will also be offered. The maximum deductible level will increase from \$1.50/cwt. to \$2.00. Producers will be better able to cover a minimum gross margin, which is comparative to offering catastrophic coverage. Allowable feed ranges have also been changed to better customize feed rations for an individual producer. Importantly, a subsidy has also been added for producers purchasing multiple months of LGM-Dairy insurance. The level of the subsidy will be based upon deductible level selected, ranging from 18% for a \$0 deductible to a 50% deductible for a \$2 deductible.²¹ These changes should encourage additional participation in the program according to Pennsylvania Secretary of Agriculture, Russell Redding.²² Right now, these subsidies are not being funded through farm bill dairy program appropriations. Additional subsidies without elimination of other programs would require offsetting funding sources.

A recent paper published in the American Journal of Dairy Science by University of Wisconsin researchers discusses optimal strategies for using the LGM-Dairy program²³ for Wisconsin dairy farms. Some of the LGM educational materials are based on this work. Although this strategy may not be

¹⁹USDA - RMA. "[Improvements to the Livestock Gross Margin for Dairy Cattle Insurance Plan.](#)" **October 26, 2010. RMA Program Announcement.**

²⁰ U-W Madison. "LGM-Dairy: Upcoming Changes." [Understanding Dairy Markets LGM-Dairy website.](#) 2010.

²¹ RMA Fact Sheet "[Livestock Gross Margin Insurance - - Dairy Cattle](#)" November 2010

²² Pennsylvania Department of Agriculture. "[Agriculture Secretary: Policy Changes Make Dairy Insurance More Affordable, User-Friendly.](#)" November 16, 2010. News release.

²³ Valvekar, et al. "[Identifying cost-minimizing strategies for guaranteeing target dairy income over feed cost via use of the Livestock Gross Margin dairy insurance program.](#)" 2010. J. Dairy Sci. 93 :3350–3357
doi: 10.3168/jds.2009-2815



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 typical for all types of dairies, it gives producers an understanding of how an individual farm may develop
2 its own least-cost insurance strategy. This study found that an optimal strategy for an average 120-cow
3 Wisconsin dairy that wanted to purchase LGM-Dairy in July 2009 and insure a \$5 margin would carry a
4 producer premium of \$0.055/cwt. for 52 percent of production with variable monthly production covered
5 from September 2009 to June 2010. Valvekar, et al. determined that covering all months of production at
6 the same level resulted in twice the premium cost to producers. Those experienced with risk management
7 strategies in other commodities generally advise a portfolio approach to risk management and encourage
8 using several strategies to manage that risk. These results support that common strategy. That premium is
9 1.10% of the desired income over feed costs, indicating that LGM coverage can be obtained at a
10 reasonable cost to producers.

11
12 Dairy Producer Margin Protection Program (DPMPP)

13 One of the pillars of Foundation for the Future (FFTf) program proposed by National Milk Producers
14 Federation is the Dairy Producer Margin Protection Program (DPMPP).²⁴ The DPMPP would be a
15 federal program that supports margins and would require producers to participate for the life of the next
16 farm bill. In order to fund the program, the MILC and DPPSP would be eliminated, and those program
17 funds would be allocated to fund the base and supplementary coverage levels.

18
19 The program has two tiers of protection – the first would be a base margin guarantee and the second
20 would be supplemental margin insurance coverage. According to NMPF's proposal, the base margin
21 guarantee would be half of the CBO projected margin. The current proposal estimates approximately \$4
22 for margin coverage. Producers could receive payments on 90 percent of their historical milk base.
23 Bases would be determined by taking the highest milk production from the previous three years or recent
24 months' production extrapolated to twelve months for new producers.

25

²⁴ NMPF. "[Foundation for the Future – A New Direction for Dairy Policy](#)." June 2010.

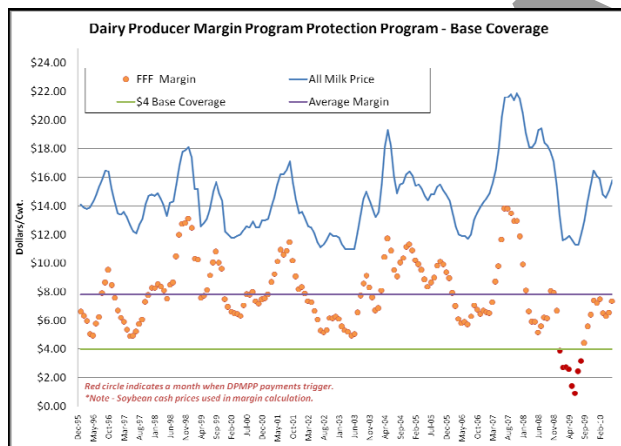


**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

The supplemental “buy-up” insurance tier would include a federal subsidy for buying additional margin coverage protection. The subsidies available would be based upon a sliding scale. As higher coverage levels are elected, producers will get less Federal subsidy. An important note is that producers would be required to hold the same level of supplementary coverage throughout the entire program. NMPF envisions that this program would be free from payment limits because they classify it as insurance. Generally speaking, there are no payment limits on crop insurance because producers pay a premium into the program.

American Farm Bureau Federation reviewed the DPMPP.²⁵ Its analysis suggests that the program can fit within the allotted baseline for dairy programs should CBO choose to score the margin in a way that reflects the relationship between milk prices and feed costs.



According to the analysis by the AFBF, base coverage level works like a counter-cyclical margin protection payment. They observed that the base program would not pay out very often. Looking back 15 years, base payments would have been triggered in eight of twelve months in 2009. There were some difficult price/margin periods during that time period (1997, 2002-03, and 2006) that would have not received any base payment. It

is likely that supplemental coverage would have triggered for most farms.

²⁵ AFBF Economic Analysis Department. “[AFBF Analysis of National Milk Producers Federation Foundation for the Future Proposal](#).” September 2010.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 The supplemental program appears to structurally fit the criteria of being insurance. NMPF has designed
2 the program to put a great deal of emphasis and funding in the base program. Subsidies for the
3 supplemental, voluntary insurance portion would be funded through remaining dollars, essentially CBO's
4 dairy baseline less the cost of the base program.

5
6 The base program, as written, is completely supported by the government. In theory, it works like
7 catastrophic crop insurance (CAT) or the Noninsured Assistance Program (NAP) currently offered
8 through RMA. According to AFBF's report, both of these programs charge \$250 to \$300 per policy in
9 administrative fees. If NMPF wants this program to work like CAT and NAP and bolster its case for
10 being free of payment limits, there could be value to asking producers to pay a nominal fee for the
11 program.

12
13 FAPRI's analysis acknowledges that the margin insurance component of the program will provide better
14 protection to producers in times of extreme industry stress when both coverage tiers are utilized. The
15 current MILC program would make payments to producers sooner, but as margins decline DPMPP would
16 make larger payments.

17
18 The analyses of the DPMPP by FAPRI and Nicholson/Stephenson showing financial impacts are bundled
19 with the Market Stabilization program as part of the overall FFTF proposal. Therefore, the review of
20 these analyses will be covered on a bundled basis after the supply management discussion later in this
21 report.

22
23 Absent further specific analysis that isolates the impact of the DPMPP, the subcommittee believes that the
24 program would reduce price volatility and that NMPF designed the program to be user-friendly and easy
25 to understand. In general, dairy producers do not have much experience designing specific risk
26 management plans, so a "national" insurance concept is a good approach to leading dairy producers
27 toward more risk management. The DPMPP addresses margins, capturing both the milk price and feed
28 costs, which is more relevant than the current DPPSP which only attempts to address the milk income.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

Supply management

Several supply management plans have been put forth in recent months by industry advocacy groups. Supply management in agricultural commodities is not a new concept. Marketing quotas have been used in the U.S. and other countries as a way to control prices with varying degrees of success. Although there has never been a Federal mandatory dairy supply management program, with the exception of assessments, Federal policy actions in the early 1980s attempted to reduce milk supplies during a tenuous price period. Cooperatives Working Together (CWT) is a voluntary supply management program operated by several of the nation's dairy coops and independent producers as a way to reduce domestic supplies of milk and/or dairy products. It is useful to review these and other supply management programs as the committee debates the future direction of U.S. dairy policy.

A study from Informa Economics²⁶ on behalf of the International Dairy Foods Association categorizes supply management programs as five different types. It is important to differentiate supply management programs because they are not all the same.

Program Type	Attempted In	Description
Revenue Sharing Quota	Canada (1960s), California (current)	Does not restrict overall production, but farmers are paid more for milk "within quota"
Marketing Quota	Canada (current), EU (current)	A strict cap on total milk marketed by each farm. A penalty is charged if farmer overproduces
Assessments, Co-Responsibility Fees, Levies	Canada, EU, and US at various times	The government charges a tax on each unit of milk produced when supply exceeds demand.

²⁶ Informa Economics. " [An International Comparison of Milk Supply Control Programs and Their Impacts](#)." September 2010. Paper presented by IDFA to DIAC.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

Program Type	Attempted In	Description
Paying farmers not to produce	EU (1976-80), US (1984-85)	The government pays a farmer to reduce his production from a base level
Paying farmers to retire	EU (1985), US (1986-87,2003-10)	A subsidy is paid to slaughter or export a farmer's entire dairy herd

1 The policies above create either an incentive or a disincentive for a producer to take a given action to
2 reduce supplies. The policy levers being applied in these situations have ramifications for costs and
3 effectiveness of the programs. This report will examine U.S. and international attempts at supply
4 management for dairy and other commodities. A thorough review of these programs will help the
5 committee better understand the implications of the various supply management or market stabilization
6 schemes for the U.S. dairy industry.

7
8 U.S. Crops

9 Supply management/quota programs for U.S. crops grew out of the first Agricultural Adjustment Acts of
10 the 1930s. Marketing quotas for wheat, cotton, rice, sugar, peanuts and tobacco were all utilized at
11 different points during the 1900s. Quota programs for peanuts and tobacco ran from the 1930s until
12 buyouts were ultimately offered to peanut quota-holders in 2002 and tobacco in 2004. Provisions in the
13 2002 Farm Bill allocated funding to the buy-outs driven by a need for greater market-oriented support
14 policies. In general, U.S. agricultural policy has attempted to move toward more market-oriented
15 solutions and away from supply controls and set-aside programs (with the exception of the Conservation
16 Reserve Program) in the last 20 or so years.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 Peanuts and tobacco were able to survive the removal of their quota systems and adapt to their marketing
2 environments. According to a 2009 ERS study,²⁷ “The remaining producers farmed more peanut and
3 tobacco acres, operated larger farms, and are generally in as good financial condition today as the average
4 farmer preceding the buyout.” These farms have utilized risk management, contracting options, and now
5 qualify for other farm programs. Prices remain below quota levels, but those price levels have revived
6 demand and helped drive export markets, especially for peanuts. Production shifts also occurred, as better
7 growing regions saw increases in production.

8
9 Sugar remains the only “program” commodity with a domestic quota in the form of marketing allotments.
10 USDA is responsible for examining the domestic and international markets and determining allowable
11 market allocations for processors and allowable import levels.²⁸ The sugar program has come under fire
12 for artificially raising the price of sugar to U.S. and international consumers. Prices for sugar tend to be
13 stable but generally remain above the world prices. High over-quota tariffs are an important element of
14 the program. Certain specialty crops, like cranberries, are permitted to use quotas in their marketing
15 orders.²⁹ Cranberry markets have been used sparingly in the last 35 years and only when prices were
16 severely depressed.

17
18 U.S. Dairy Supply Control Measures

19 As previously mentioned, the U.S. Government has not operated a mandatory supply management
20 program for dairy. However, attempts to incentivize reductions in milk marketings at the national level
21 were offered in the early and mid-1980s as a way to reduce bulging market supplies. Two programs that

²⁷ Dohlman, et al. “[The Post-Buyout Experience: Peanut and Tobacco Sectors Adapt to Policy Reform.](#)” November 2009. Economic Information Bulletin No. (EIB-60).

²⁸ USDA-ERS. “[Sugar and Sweeteners: Policy.](#)” Updated January 7, 2009.

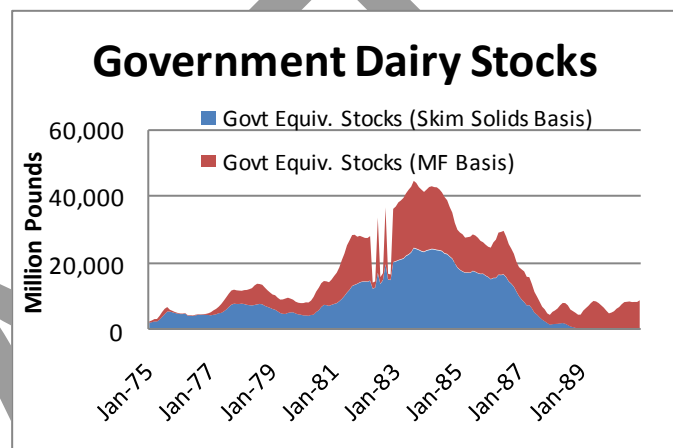
²⁹ Jesse, E. and B. Cropp. “[Use of Mandatory Supply Control in the U.S. Dairy Sector.](#)” Revised June 2006. U-W Marketing and Policy Briefing Paper.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 mostly closely resemble voluntary supply management programs were the Milk Diversion Program
2 (MDP) and the Dairy Termination Program, also known as the “whole-herd buy-out.”
3 Assessments on Milk Production
4 Leading up to the dairy policy interventions in the 1980s, the surpluses of U.S. dairy products were
5 building. Manufactured milk support prices had steadily increased because they were determined by the
6 parity index, which attempted to keep the same relationship between milk prices and farm costs as existed
7 in the period of 1910-14. In 1973, the
8 Agricultural Act of 1949 was amended to
9 raise the minimum support from 75% to
10 80% of parity. The Agricultural and
11 Consumer Protection Act of 1977 continued
12 the minimum support level of 80% of parity
13 through April 1, 1981 and required that the
14 support price be adjusted semi-annually
15 (October 1 and April 1) to reflect changes in
16 the index of prices paid by all U.S. farmers
17 for all purchased inputs.³⁰ This encouraged over-production to the point where the domestic markets
18 could not absorb the excess and huge government stockpiles developed at a large cost to the government.
19 The government spent \$2 billion in USDA’s Commodity Credit Corporation (CCC) purchases in the
20 1980-81 marketing year alone. Despite the fact that support prices were frozen at \$13.10 and
21 subsequently disconnected from parity at the end of 1980, inventories continued to build. The Omnibus
22 Budget Reconciliation Act of 1982 levied \$0.50/cwt. assessments on producers to help pay for the price
23 support program. The assessments did not curb spending on CCC purchases, as costs hit \$2.6 billion in
24 1982/83. The government levied another \$0.50 assessment on producers beginning on September 1, 1983



³⁰ Cropp, Bob. [“Dairy Price Support Program Options”](#).



**US Department of Agriculture
Dairy Industry Advisory Committee**

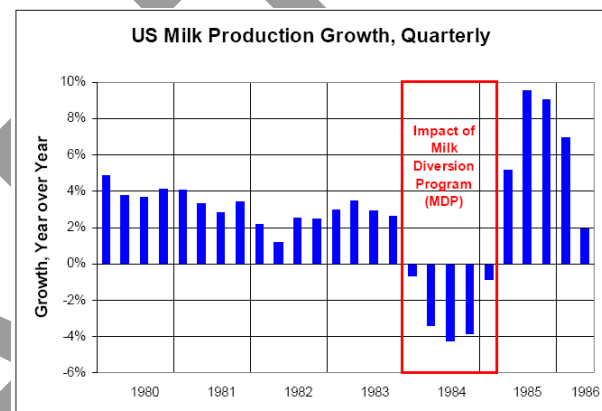
**Subcommittee C
First Draft**

but it was refunded if a producer reduced his or her milk marketings by a target amount. These assessments did little to reduce overall milk production growth, so the government got more creative.

Dairy Diversion and Termination Programs

Congress passed the Dairy Production and Stabilization Act of 1983 in November of that year. That Act created a 15-month milk diversion program, reauthorized the assessments on milk production to pay for product storage and milk diversions, created the dairy check-off promotion program through a \$0.15/cwt. assessment, and lowered the price support program from \$13.10 to \$12.60/cwt. USDA was also given the authority to reduce the support price if CCC purchases exceeded certain levels.

The milk diversion program was the nation's first voluntary supply management program. It paid producers to reduce their milk marketings by 5 to 30% over a fifteen month time period from January 1984 to March 1985. Approximately 38,000 participants were paid \$10.00/cwt. for milk reduced from their base. Milk production declined for the five quarters following the institution of the program. GAO estimated that the program reduced milk supplies by 3.74-4.11 billion pounds below what could have otherwise been expected.³¹ \$955 million was paid to producers. During this time CCC purchases and inventory building slowed. GAO estimated that \$614 to \$664 million in government costs was avoided. However, the stock situation did not disappear. Milk production rebounded after the program ended, and many believe that, had the market been left to its own devices, some of this production reduction would have come naturally. As previously mentioned, stock building was reduced, but an overhang of dairy supplies depressed the marketplace.



³¹ GAO. [“Effects and Administration of the 1984 Milk Diversion Program.”](#) 1985. US GAO/REC-85-126.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 The 1985 Food Security Act authorized the Dairy Termination Program. The Dairy Termination
2 Program, also known as the “whole-herd buyout” offered dairy farmers the option to submit bids in
3 exchange for liquating their milking herds. Producers who were accepted into the program had to either
4 slaughter or export animals 18 months or older between April 1, 1986 and August 31, 1987 and agree to
5 idle their operations for 5 years. About 14,000 producers who shipped around 12.3 billion pounds of milk
6 were accepted into the program. The producers received payments totaling \$1.8 billion.³² The program
7 was funded by producer assessments and Federal dollars. GAO found that the termination program in
8 addition to reductions in price supports were a cost effective way to reduce the quantity and expense of
9 government programs, and the program benefited consumers by \$3.3 billion and cost producers \$2.3
10 billion. While the program resulted in reduced milk production, red meat prices remained depressed for
11 most of that time, placing economic pressure on the beef sector. The U.S. Government responded with
12 additional purchases of red meat during this time.

13 A 1992 study by Bausell, et al.³³ examined the effectiveness of the termination and diversion programs, in
14 addition to the lowering of price supports. This analysis determined that the termination and diversion
15 programs meaningfully addressed the problem but were ultimately incomplete or impermanent in their
16 effects. Policy actions of this sort do not generally lead to long-term structural changes in the industry,
17 rather they create short term shifts in supply. They further explain that the impacts of the milk diversion
18 program were shorter-lived than those of the termination program. Both programs did yield some slight
19 government and consumer savings, but the most impactful of all the programs was the reduction in
20 government price support levels.

21 California Dairy Quota

³² GAO. “Dairy [Programs: Effects of the Dairy Termination Program and Support Price Reductions.](#)” June 1993. GAO/OCE-93-1.

³³ Bausell, C. et al. “An [Analysis of 1980s Dairy Programs and Some Policy Implications.](#)” August 1992. American Journal of Agricultural Economics. Vol. 74, Num. 3, pp.605-616. Print. Abstract only available online.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 The state of California has operated a quota system since 1969. Producers who operated during 1966 or
2 1967 and sold to fluid bottlers were granted an annual fluid milk quota (i.e. base) equal to their shipments
3 plus 10 percent. Producers who do not have quota are not taxed or restricted from shipping. Rather, they
4 receive a “non-quota price” for their milk. At one point, this price was close to the weighted average
5 value of the cheddar and butter /dry milk values but, subsequent to the implementation of a fixed \$1.70
6 differential between quota and over-base milk in the early 90s, the non-quota price may fall below the
7 manufacturing values. Quota pricing did not stop the growth of milk production in the state because it
8 was not accompanied by a corresponding limitation on production. Milk production totaled 8.9 billion
9 pounds in 1969 and has grown to 39.5 billion pounds in 2009. That is a 344% increase in production
10 while the quota has been in place. The quota pricing system was not necessarily designed to control
11 supplies – rather it was a way to hold producers who had fluid contracts harmless when pooling was
12 introduced in the state order. Thus, quota pricing has done little to affect amount of milk produced in the
13 state but the \$1.70 spread between quota and non-quota milk does have some parallels with concepts that
14 discount prices on new milk production to disincent growth.

15
16 **U.S. Cooperatives Working Together (CWT)**

17 The Cooperatives Working Together (CWT) program was created in 2003 by the National Milk
18 Producers Federation as a way to “strengthen and stabilize producer milk prices by taking actions as
19 necessary to positively impact supply and demand.” CWT is an example of a voluntary, industry-drive
20 supply management program. It is run by a committee of producers from the member cooperatives and
21 individual producer representatives. Funding for the program comes from a voluntary \$0.10/cwt.
22 assessment of producers’ marketings.

23
24 Historically, there have been two components of the program – herd retirement and export assistance.
25 The decisions to activate the program are based on the outlook for milk prices and producer margins. The
26 herd retirement works similarly to the Federal whole-herd buyout whereby producers voluntarily bid to
27 slaughter their cattle. One difference is that producers may repopulate their facilities by forfeiting a
28 portion of their payment in the case of CWT. Producers are paid for 12 months of production and must



**US Department of Agriculture
Dairy Industry Advisory Committee**

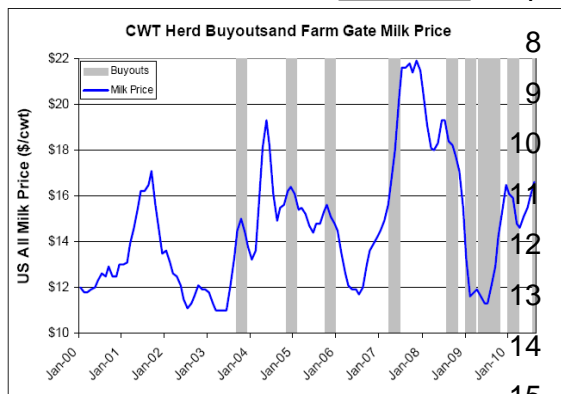
**Subcommittee C
First Draft**

1 send all cows and dry cows to slaughter. In the past, there have been optional heifer retirements. Ten
2 herd retirement rounds have been conducted.

Round	Announced	Farms Retired	Cows Retired	Heifers Retired	Average Price per cwt/milk	Average Price per cow	Total Cost
1	Jul-03	299	32,724		\$4.03	\$749	\$25,451,030
2	Sep-04	363	51,700		\$5.24	\$1,005	\$51,450,000
3	Aug-05	442	64,000		\$6.75	\$1,266	\$85,050,000
4	Feb-07	333	52,783		\$5.50	\$1,042	\$58,866,000
5	Jun-08	203	24,860	275	\$6.10	\$1,059	\$26,625,070
6	Oct-08	186	50,630	1,240	\$6.49	\$1,251	\$64,861,531
7	Apr-09	367	101,040	818	\$5.76	\$1,119	\$113,033,000
8	Jul-09	274	74,114	2,958	\$5.58	\$1,146	\$84,967,000
9	Oct-09	143	25,620	372	\$5.25	\$1,059	\$27,402,900
10	May-10	180	33,409	0	\$3.75	\$730	\$24,375,000
Total		2,790	510,879	5,663	\$5.70	\$1,100	\$562,081,530

3 Source: CWT Press Releases, CWT Financial Statements, Informa Economics Estimates

4 The herd retirements have worked with varying degrees of success. The graph below shows the
5 relationship between the U.S. All-Milk price and the herd retirement periods. Eventually, the
6



Sources: USDA, Informa Estimates

7 expectation that CWT would offer herd retirements
8 slowed culling that probably would have happened
9 otherwise. CWT was the primary vehicle for removing
10 dairy cattle from the market in 2009. CWT analysis by
11 FAPRI shows positive impacts on milk prices over the
12 life of the program. However, markets and producers
13 have fully adapted to the program. In essence, CWT
14 worked best when the market did not expect a removal.
15 For these reason CWT has announced a discontinuation
16 of the herd removal program and a new focus – export assistance.

17
18 European Supply Management Programs

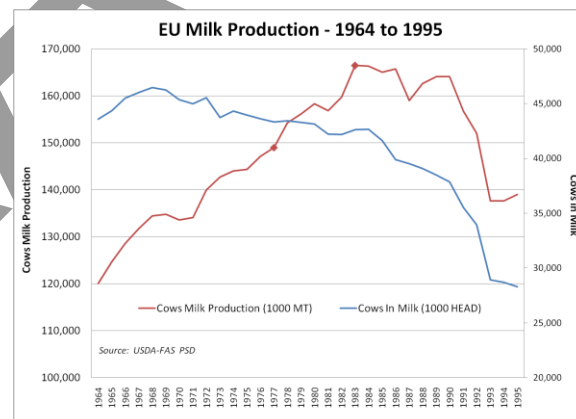
19 European dairy policy has been in a constant transitional state since the European Economic Community
20 (EEC) was formed in the 1960s. In the past fifty years, the E.U. has dabbled with price supports, target



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 prices, levies, intervention purchases, export subsidies, and quotas to deal with dairy markets. The EU
2 dairy policy has experienced some of the same growing pains as the U.S. dairy industry and has tried
3 many of the same policy interventions. To date, CAP reform in the mid-2000s left the European dairy
4 industry with intervention purchases (similar to U.S. DPPSP), export subsidies (much larger than U.S.
5 DEIP), and decoupled direct “green” payments (U.S. currently has a counter-cyclical payment, MILC).
6 The major difference between U.S. and European dairy policy is the marketing quota. The EU’s Common
7 Agricultural Policy (CAP) made many attempts to regulate supply, demand, and producer prices via price
8 supports, target prices, and levies. Unfortunately, production continued to grow, as did European
9 intervention stockpiles. In response to the increases in supports with the milk sector’s common market
10 organization, milk production was far greater than demand by the late 1970s.³⁴ Beginning in 1977, co-
11 responsibility levies were assessed on milk production in order to reduce pay prices and help pay for the
12 cost of dairy programs.³⁵ It was also hoped that these levies might reduce production, as willing farmers
13 were compensated for converting their dairies into beef operations. These taxes ranged from 0.5 to 3.0%
14 of the target price.³⁵ The graph showing EU milk
15 production from 1964 to 1995 depicts the lack of
16 impact that the levies had on E.U. milk production.
17 From 1977 to 1984, European milk production grew
18 by 12% from 150.0 million MT to 166.3 million
19 MT.
20 In 1984, the EU devised the “super-levy” and the
21 milk production quota. Quota levels for most
22 member nations were set at 1981 levels plus 1



³⁴ EC Working Paper. [“Commission Working Document – Report on Milk Quotas.”](#) October 2002. SEC (2002) 789 Final.

³⁵ Bailey, Kenneth. [Marketing and Pricing of Milk and Dairy Products in the United States](#). Iowa: Iowa State University Press, 1997. Pp. 227-229.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 percent²⁶. Irish and Italian levels were based on 1983 deliveries. Any milk delivered over the quota faced
2 a “super levy” of 75-100%²⁶. Co-responsibility levies remained. The super levy was ultimately increased
3 to 100-115% of the market value of over production in 1989 when the quota was increased due to court
4 challenges²⁶. Each country was responsible for determining how to divvy up its quota, but no national
5 trading of quota is permitted (i.e. Germany cannot obtain more quota from France.) Quota can be traded
6 (purchased, sold, or leased) within a country. Originally, many of the nations tied quotas to specific land
7 bases. Despite the presence of the quota, Europe dealt with heavy supplies through the 1990s and 2000s.
8 The early 2000s brought about European CAP reform. From 1988-92, the Common Agricultural Policy
9 represented nearly 61% of the total EU budget.³⁶ The expense of the CAP has led to many reforms,
10 including decoupling payments from production and lower price supports. As part of the 2003 CAP
11 reforms, the EU decided to abolish dairy quotas in 2015. Quota abolition is being phased in by annual
12 quota increases – the “soft landing.” Despite the disastrous conditions in 2009, the EU is continuing with
13 its plan to phase out quotas. Much of the drive to abolish quotas comes from an exerted effort at trade
14 liberalization and more market-oriented policies within the EU. Even with the quota, the dairy industries
15 in various nations are consolidating. In Denmark, the average herd size is 101 cows.³⁷

16 Canadian Supply Management System

17 Canada has a long history of supply control for many commodities, including dairy, eggs, and poultry.
18 The national Canadian dairy program serves three functions: 1) To control domestic production through
19 marketing quotas, 2) control imports through arbitrarily high tariff levels, and 3) pricing and pooling to
20 ensure profitability for producers. The Canadian system is probably the most stringent dairy supply
21 management program in the world. Two portions of the program are run by Canadian Dairy Commission
22 (CDC).

³⁶ EU Press Release. “[EU Budget – Myths and Facts](#).” September 2007. Reference: MEMO/07/350

³⁷ Jongeneel, R. et al. “[European Dairy Policy in the Years to Come – Quota Abolition and Competitiveness](#).” March 2010. LEI report 2010-017.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 Similar to other national dairy interventions, the Canadian dairy program was born from stress in the
2 industry. The country experimented with price supports and provincial and regional quota programs prior
3 to the creation of the Canadian Supply Management Committee (CSMC) in 1974.³⁸ Subsequently, the
4 National Milk Marketing Plan created the Market Sharing Quota (MSQ). The program allocated quota
5 amounts to the various provinces at the beginning of the program, and the provinces were charged with
6 distributing quota to producers. Like Europe, quotas cannot be transferred among provinces.²⁹ In
7 Canada, quota is a legal right to produce – you cannot produce without it. Prospective producers can
8 purchase quota from existing producers to establish a dairy, but current quota rates are generally
9 prohibitive. Current quota prices exceed C\$25,000/kg in all provinces outside of Ontario and Quebec
10 where the provinces instituted a C\$25,000 ceiling³⁹. In order to establish a 75 cow dairy, a farmer would
11 need over C\$2 million to purchase quota.

12 The CDC, via the CSMC, is charged with setting the national milk production target for industrial milk in
13 Canada, or Market Sharing Quota.³⁸ The CSMC will monitor the domestic and international markets and
14 attempt to determine the milk supply that, when coupled with estimated demand, will achieve target
15 prices for producers. The MSQ is calculated based on the previous year's domestic consumption,
16 anticipated changes in demand, projected dairy stocks, import commitments, and export obligations.
17 Each year, the CDC reviews producer prices for milk based on milk production costs, labor, investments,
18 and macroeconomic indicators and announces a target price that producers will be paid. The CDC is
19 legislated to return a “fair return for efficient producers.” The government routinely surveys costs of
20 production in order to make the price determinations. The CDC also operates a price support program for
21 industrial milk.⁴⁰ Annually, the CDC sets price supports for butter and skim milk powder. The provincial
22 marketing boards use these prices as reference points for setting prices in their regions, and the boards

³⁸ Canadian Dairy Commission. ”[History of the CDC](#).” Modified May 2010.

³⁹ Canadian Dairy Information Center, [Milk Quota Exchange - - 2010](#).

⁴⁰ Canadian Dairy Commission. <http://www.cdc-ccl.gc.ca/CDC/index-eng.php?caId=812&pgId=2187>



US Department of Agriculture Dairy Industry Advisory Committee

Subcommittee C First Draft

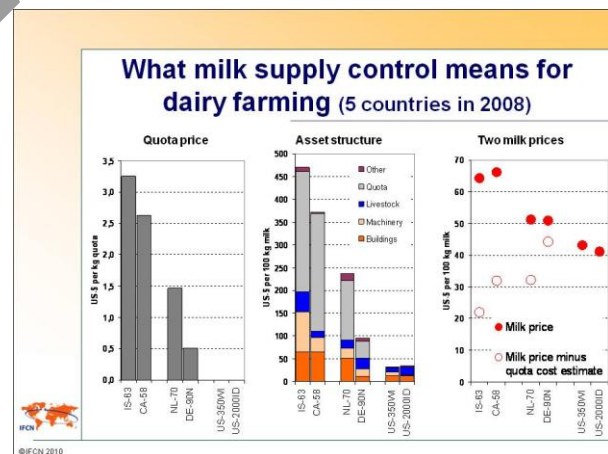
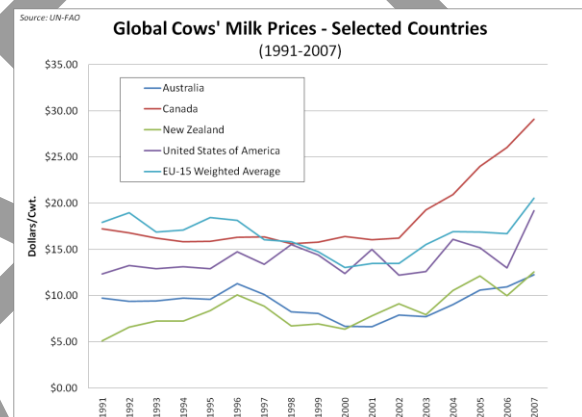
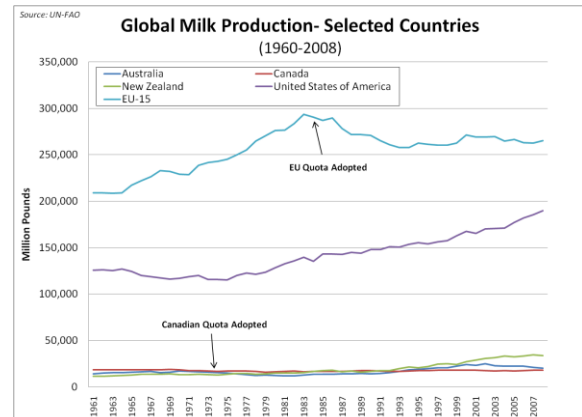
also serve the points for milk price pooling and profit sharing. While the Federal government announces annual quota limits, the provinces are responsible for management and oversight of the quota.

The supply management system is facilitated by very high import tariffs that severely imports. For example, over-quota cheese tariffs are 245.5% but not less than C\$4.52/kg.²⁶

Implications and International Lessons:

There is little doubt that quota programs in EU and Canada have been successful in managing supplies of milk. These strict quota schemes pose heavy penalties or totally prohibit marketing milk beyond quota levels. Data from the UN shows that EU milk production actually declined considerably from pre-quota levels.

There is also no doubt that the supply management program helps raise producer prices in Canada. The evidence is a little less conclusive for the program in Europe based on FAO data.

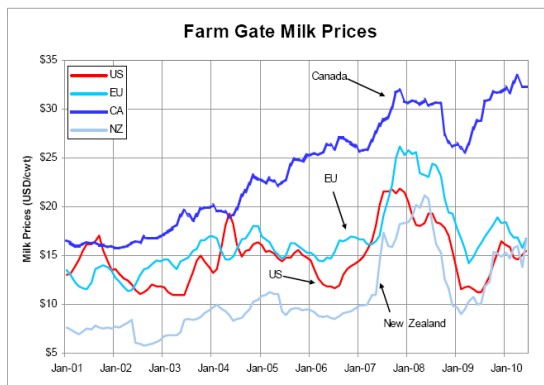




**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

However, higher milk prices do not necessarily translate into higher milk prices net of quota costs new entrants into the industry. Based upon IFCN estimates, the prohibitively high cost of quota resulted in a milk price net of quota cost that was below U.S. price levels in 2008.⁴¹



Sources: USDA, LTO-Nederland, CDC, Informa Estimates

Average Farm Gate Milk Prices (USD/cwt)				
Years	US	EU	CA	NZ
01-06	13.95	14.81	20.27	8.46
07-10	16.40	19.19	29.87	14.49

Standard Deviation of Farm Gate Prices				
Years	US	EU	CA	NZ
01-06	1.93	1.69	3.76	1.35
07-10	3.28	3.62	2.34	3.61

Coefficient of Variation of Farm Gate Milk Prices				
Years	US	EU	CA	NZ
01-06	14%	11%	19%	16%
07-10	20%	19%	8%	25%

Sources: USDA, LTO-Nederland, CDC, Informa Estimates

The existence of a strict supply management program also does not indicate that prices are not volatile. Even though Canada is somewhat insulated, Canadian prices have been volatile in recent times.

The commonly-held belief that supply management will maintain the number of cattle and the number of farms is inaccurate. Even countries with supply management programs are seeing reductions in total cow numbers, and these reductions, especially in Europe, tend to be more prominent. The more efficient cows become through genetics and management, the fewer cows can be maintained to fit within the quota.

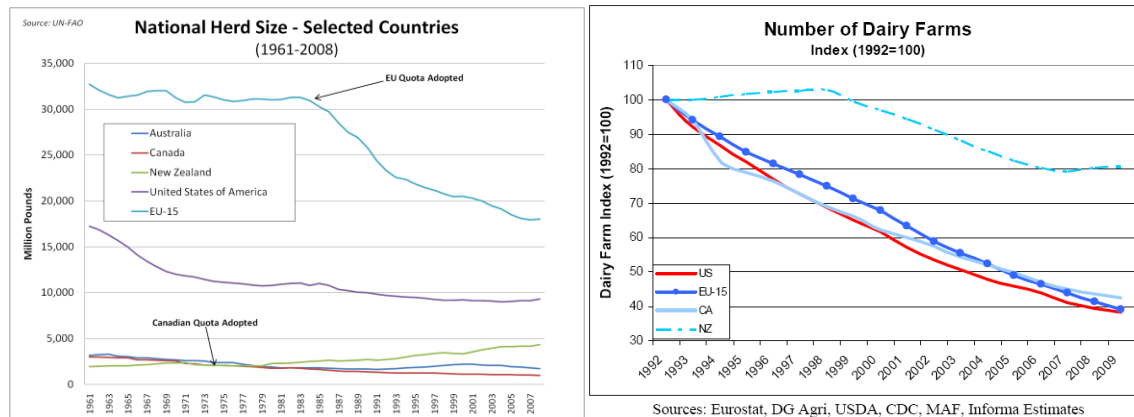
According to the Informa report, farm numbers have been reduced in US (-62%), EU-15 (-61%), Canada (-58%), and New Zealand (20%) from 1992 - 2009.

⁴¹ Torsten Hemme (IFCN). "Global Dairy Trends and Their Effect on Volatility", October 2010 presentation to World Dairy Expo.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**



1
2
3 And finally, supply management can call into question the long term competitiveness of an industry. The
4 attractiveness of imports is one of the factors in this calculation. Available milk supplies for new
5 processing needs are not available in countries that operate under quotas. Countries that operate under
6 quotas are not well positioned to take advantage of new export markets, as there is no excess supply to
7 release.

8
9 Proposed U.S. Supply Management Programs

10 The acute level of economic stress in the U.S. dairy industry has reignited the debate about mandatory
11 supply management programs in the United States. Thus far, two programs have gained the most
12 attention from producers, policy makers, and policy analysts. Both of these programs differ from the
13 supply management programs described for other countries in significant ways. In 2010, Representative
14 Jim Costa (D-CA) introduced H.R. 5288, “The Dairy Price Stabilization Program of 2010.” A companion
15 bill, S. 3531, was introduced by Senator Bernie Sanders (D-VT) and is similar in many ways. The Costa-
16 Sanders bill was the outgrowth of “growth” management proposals offered by the Milk Producers



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 Council of California (MPC)⁴² and the Holstein Association USA. In conjunction with NMPF's margin
2 protection program, the organization has proposed a mandatory supply management program called the
3 Dairy Margin Stabilization Program.

4 Costa-Sanders

5 The following summary for the Costa-Sanders bill was provided by the Congressional Research Service's
6 report entitled, "Previewing Dairy Policy Options for the next Farm Bill."⁴³

7 H.R. 5288 and S. 3531 would create a mandatory, nationwide program designed to manage the U.S.
8 milk supply so that milk producers could avoid low and volatile farm milk prices.⁴⁴ The program
9 would attempt to stabilize farm milk prices by assessing producers who increase milk production over
10 specified levels. Both the market access fee and the production growth rate would be determined
11 based on market indicators. The program would operate alongside existing dairy programs, including
12 marketing orders, price support, and the MILC program.⁴⁵

13 Under H.R. 5288, each dairy producer would be assigned an initial base raw milk marketing quantity
14 using the highest annual marketings among calendar years 2007, 2008, or 2009. The base would be
15 adjusted to an "allowable milk marketings" amount for each farm, depending on the level of the
16 national milk-feed price ratio (a measure of the farm milk price relative to feed costs), as specified in
17 the bill [see Table 3 in Appendix]. Producers who sell more than their allowable milk marketing or
18 expand their operations would pay a "market access fee" into a pool that would be redistributed to
19 producers who do not exceed their allowable milk marketings. The program would not be a rigid

⁴² Vandenheuvel, R. and S. Vander Dussen. "[Dairy Price Stabilization Program](#)." April 2010. Presentation to DIAC.

⁴³ Shields, Dennis A. "[Previewing Dairy Policy Options for the 2010 Farm Bill](#)." July 2010. CRS Report R41141.

⁴⁴ Office of Representative Jim Costa, "Rep. Costa Introduces Legislation to Strengthen Dairy Industry," press release, May 12, 2010, http://www.costa.house.gov/index.php?option=com_content&task=view&id=631&Itemid=82. Additional background information is available from the Milk Producers Council, at <http://www.milkproducerscouncil.org>; and from Holstein Association USA, Inc., at http://www.holsteinusa.com/pdf/DSPS/DSPS_plan_v18_01152010.pdf.

⁴⁵ For background on dairy programs and pricing, see CRS Report R40205, *Dairy Market and Policy Issues*; and CRS Report R40903, *Dairy Pricing Issues*.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 quota system; producers could sell as much milk as they want, provided they pay any applicable fees.
2 Producers could transfer (sell) their marketing base to another individual or entity who purchases the
3 dairy facility.

4 Under H.R. 5288, the Secretary of Agriculture would consult with a 30-member board consisting of
5 24 dairy producers (with diverse geographic representation) and six other members, two each
6 representing consumers, fluid milk bottlers, and dairy product manufacturers. (A dairy economist
7 would be an adviser to the board.) Every three months the Secretary of Agriculture, in conjunction
8 with the board, would announce the allowable annual growth in marketings (a national rate applied at
9 the farm level) and the market access fee for excessive milk marketings. See Table 3 for the growth
10 rate and fee schedule contained in the bill. Some discretion for deviating from the schedules would be
11 allowed, but only if at least two-thirds of the board approves. Proponents expect that the growth rate
12 and fee would be set at levels to exact the necessary change in milk production and prevent a sharp
13 decline in farm milk prices.

14 S. 3531 is very similar to H.R. 5288. Importantly, the parameters for determining allowable milk
15 marketings (production growth) and the fee schedule are the same. The major difference between
16 H.R. 5288 and S. 3531 is that Senate bill mandates the supply management program, while H.R. 5288
17 requires producer approval before its implementation. The remaining differences deal mostly with
18 voting procedures, producer board composition, and establishing the initial marketing base.

- 19 • Both bills require a producer referendum within three years to continue the program.
20 Members are allowed to vote separately from their cooperative.
- 21 • However, S. 3531 contains special provisions for two rounds of voting on the continuation.
22 The first round requires producers to vote directly (i.e., no bloc voting). The second round
23 allows coops to vote on behalf of producers who did not vote in the first round.
- 24 • The producer board consists of only 15 members in S. 3531, compared with 30 in the House
25 bill, but the proportions of producers and various representatives are the same in both bills.
26 Also, the Secretary appoints the members in H.R. 5288, while dairy producers elect the board
27 members in S. 3531.
- 28 • When establishing the initial marketing base, the Senate bill differs from the House bill in
29 two ways:



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 ○ During the first quarter of program operation, S. 3531 contains provisions for
2 producers to select either (1) the corresponding quarterly average of 2007, 2008, and
3 2009; or (2) the corresponding quarter of 2009. In contrast, H.R. 5288 uses the
4 highest annual total among calendar years 2007, 2008 and 2009.

- 5 • S. 3531 allows the Secretary to establish bases for producers who did not produce milk
6 during 2007, 2008, and 2009. (The House bill has no provision for this; producers without a
7 base would simply pay the access fee on all production.)
- 8 • S. 3531 includes several additional factors for the Secretary to consider when deviating from
9 the specified schedules for the allowable milk marketing growth rate and market access fee.
10 The costs of feed, labor, and machinery, and other economic forces, are among the factors
11 listed for consideration.

12
13 The program would be self-financed, with payments to producers funded by assessments on
14 producers. Although existing dairy programs would continue to operate, the federal cost of DPPSP
15 and MILC would likely be minimal if the new program effectively constrains excess milk production
16 and keeps the farm milk price above the target price.

17 As for market impacts, a similar supply management plan was analyzed by Cornell University in
18 2009 using a detailed dynamic model of the U.S. dairy industry. The analysis found that the plan
19 would increase farm milk prices and reduce farm price variability, but it would also reduce sales of
20 dairy products and might decrease processors' revenues.⁴⁶ Under a situation whereby allowable milk
21 marketings would be reduced (e.g., demand declines sharply and milk prices fall), the study indicated
22 that farm prices would not drop as low as under regular market conditions and prices would recover
23 more quickly, thus providing benefits across the dairy farm sector.

⁴⁶ Nicholson, C. and Mark Stephenson. "[An Analytical Review of a Growth Management Program for Dairy Producers.](#)" Cornell University. May 2009. p. 10.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 At the farm level, current dairy farmers who expanded in 2007, 2008, or 2009 could benefit more
2 than other producers because the base calculation is determined by production in those years. New
3 farmers or those wishing to expand production would be discouraged to the extent that (1) a market
4 access fee is relatively high at the time, and/or (2) the cost of buying a milk base from another dairy
5 producer is too high.

6 Potential dairy trade impacts include the possibility that the United States, assuming more stable
7 prices, could become a more consistent supplier to the world dairy market. However, higher prices
8 associated with the plan's effective implementation could reduce U.S. price competitiveness while
9 potentially attracting more dairy imports.

10 National Milk Producers Federation Dairy Market Stabilization Program

11 The NMPF Dairy Market Stabilization program (DMSP) is intended to trigger supply reductions in time
12 of low margins. During these low margin times, producers who ship more than their marketing base will
13 receive a lower price for their milk. In supply management terms, this is akin to an assessment on
14 producers for milk in excess of a base. The provisions of the proposal summarized in the following table
15 (AFBF, 2010)²⁵:



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1

USDA will calculate the monthly margin for both the DPMPP and the DMSP using identical methodology. The margin trigger levels for the DMSP will be set as follows:

- 1) When the actual national margin is below \$6.00 for two consecutive months, producers will receive payment for 98% of their base milk marketings and be subject to a maximum reduction in payment equal of 6% of current milk marketings;
- 2) When the actual national margin is below \$5.00 for two consecutive months, producers will receive payment for 97% of their base milk marketings and be subject to a maximum reduction in payment equal of 7% of current milk marketings;
- 3) When the actual national margin goes below \$4.00 in a single month, producers will receive payment for 96% of their base milk marketings subject to a maximum reduction in payment equal of 8% of current milk marketings.

The base milk marketings will be a rolling three month average of the most recent milk marketings prior to the notification from USDA.

To address any conditions specific to individual operations, a producer will have the option of choosing the same month in the previous year as his/her base, making the selection annually.

Conversely if the actual national margin exceeds the \$6.00 trigger level margin for two consecutive months, the DMSP program will be discontinued. If either of the U.S. prices for cheddar cheese or skim milk powder (SMP) is 20%-30% higher than the world price for the applicable commodity for a period of 2 consecutive months after the DMSP has been implemented, DMSP will be discontinued unless the national average margin is below \$4.00

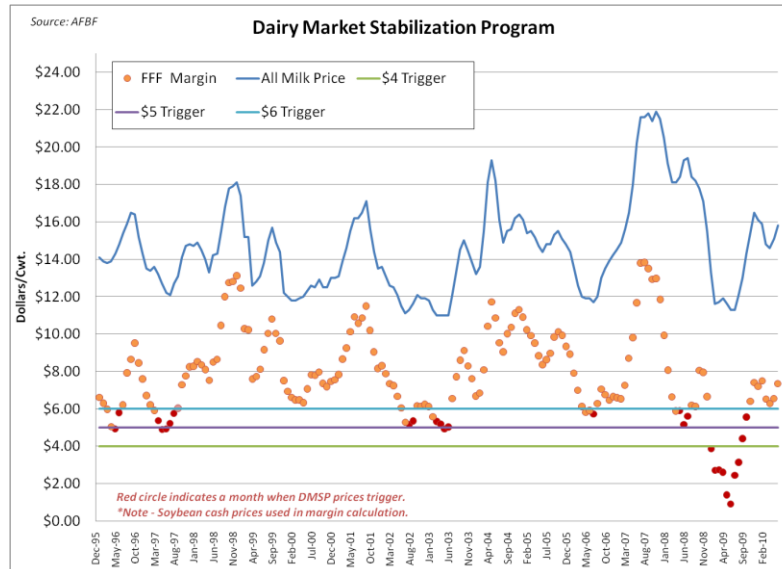
The DMSP is intended to cover all producers in all markets and will be administered by USDA's Agricultural Marketing Service (AMS).



US Department of Agriculture Dairy Industry Advisory Committee

Subcommittee C First Draft

The program is designed to trigger only when absolutely necessary. According to FAPRI and AFBF, the program would have triggered 25-27 times in the past 174 months – about 15 percent of the time.



Under the program, milk shipped by producers for which they are not paid will remain in the marketing chain. Processors will continue to pay for that milk, but that money will be retained by the federal order administrators. According to AFBF, sales of over-base milk will be indistinguishable from regular market sales. The money will be transferred to a board that will have discretion to spend the money. NMPF has proposed using this money to fund supplemental feeding and nutrition assistance. AFBF's analysis determined that this program would have generated \$70-75 million per year since 2000; however, that is an average that is greatly skewed to 2009 when 70 percent of those revenues would have been generated.

Bundled Analysis of FFTF

Both FAPRI and Nicholson/Stephenson analyzed FFTF as a collective package, including the replacement of price supports and MILC with margin insurance in combination with the market stabilization plan. Given the high level of interest in the FFTF proposal and the heavy reliance on the model conclusions, it is important to review both those conclusions and the model assumptions.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 The “Key Results” from the Nicholson/Stephenson study⁴⁷, edited to focus on FFTF, are:

- 2 •The program would reduce milk price volatility significantly compared to the Baseline, both
- 3 with and without shocks. Under the assumption of large shocks, the program would reduce the
- 4 average absolute deviation from \$1.75/cwt to \$1.13/cwt.
- 5 • Cumulative milk production from 2010- 18 would be reduced by 0.4% to 0.5% (range with and
- 6 without shocks).
- 7 • The program would reduce government expenditures for dairy programs significantly. Under
- 8 the assumption of large shocks, government expenditures would be reduced from about \$3.2
- 9 billion over 2010- 18 to \$1.6 billion
- 10 • The program would increase the average All-Milk price by \$0.17/cwt without shocks, and by
- 11 \$0.06/cwt with shocks. These price enhancement effects occur because FFTF spends collected
- 12 monies on demand enhancing activities (modeled as food donations through non-- commercial
- 13 channels);
- 14 • The programs would have different effects on net exports of American cheese, NDM and dry
- 15 whey. Under the scenarios assuming the large shock, the FFTF would reduce average monthly net
- 16 exports of American cheese by 22% compared to the Baseline. Net exports would continue to
- 17 grow under the programs, just at a slower rate than under the Baseline. Moreover, the lower
- 18 exports under FFTF would be offset to some degree by additional purchases for domestic
- 19 markets. Average monthly dry whey exports would be reduced by 2.8%
- 20 • The impact of the program on cumulative fluid sales during 2010-18 would be [a decline of]
- 21 0.4%. FFTF would reduce cumulative American cheese sales by 0.7%. Reductions in cumulative
- 22 other cheese sales would be 0.3% for FFTF.
- 23 • The programs would have different effects on Class III and IV prices. Due to purchases of
- 24 American cheese, the FFTF program tends to enhance Class III prices compared to the Baseline

⁴⁷ Nicholson, C. and Mark Stephenson. “[Analysis of Proposed Programs to Mitigate Price Volatility in the U.S. Dairy Industry.](#)” Cornell University. September 2010. Presented to DIAC.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

(an average over 2010--- 18 of \$0.57/cwt for the scenario assuming large shocks. Average Class IV prices are lower under FFTF (\$0.04/cwt) compared to the Baseline for the scenario assuming large shocks, which implies a larger average price spread between Class III and IV.

Nicholson/Stephenson concluded that FFTF would be effective in reducing both price volatility and government spending. It does have the potential to negatively impact net exports, but that could be somewhat compensated by DMSP product buy-up provisions under their assumptions.

As noted in their fourth bullet, the price enhancement generated by the model is related to the additional demand that is generated through purchases and donations of products with the money collected from producers who market milk in excess of the targeted production under the program. The pool of funds that would be generated through this provision or the level of 'new' demand is not identified. Absent specific guidance in FFTF, they assumed that 80% of the fund would be allocated to cheese purchases and 20% would be allocated to dry milk purchases, resulting in the increase the model generates in Class III prices concurrent with the reduction in Class IV prices. These price impacts are based upon a complete market isolation assumption. They assume that no donations would displace commercial sales. This assumption warrants further review in the context of studies showing that government donations have historically resulted in some levels of commercial displacement.

They also attempt to model responsiveness of producers to the pay price reductions. In the baseline scenario, they assume a percentage of milk that would have otherwise been marketed without DMSP. Although Nicholson/Stephenson do not elaborate on the size of that milk volume, they state:

"We assume that a proportion of milk that was receiving the no-payment penalty when the program was triggered would continue to be marketed under the program. We assumed that 35 percent of the penalty milk would continue to be marketed, but that adjustments to milk production and marketing would also be made over time in response to reduced profitability.

Stephenson and Nicholson then run two scenarios that show producers being more responsive to the no-pay provisions. In the scenario where producers make a full and immediate permanent reduction in supplies when the penalties go into effect, the average All-Milk price is \$0.31 higher than the baseline at \$15.63/cwt and is \$0.14 higher than the scenario assuming a 65% reduction in milk volumes in the penalty zone. Average deviation is reduced from \$0.83 to \$0.63/cwt but is higher than the \$0.35 deviation shown in the 65% reduction scenario. Total milk marketed drops by 26 billion pounds. They



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 note that the full and permanent immediate adjustment is unlikely. In the second scenario, they similarly
2 assume a full and immediate permanent reduction in supplies when the penalties go into effect but they
3 adjust the margin level that triggers the penalties from \$6.00 to \$4.95. That program sees the average All-
4 Milk price reduction of \$0.45 from the baseline to \$14.87/cwt and decreases price deviation to \$0.36/cwt.
5 They note that this scenario results in similar price patterns to the \$6 margin trigger with a 65% reduction
6 in penalty marketings.

7 This issue of producer responsiveness is a key assumption. It would be helpful to see the model results if
8 the production adjustments are less than the 65% reduction. This 65% assumption is worthy of further
9 consideration in the context of the historic experience with the various attempts to incent production
10 adjustments in the U.S, such as the limited success of the various assessment schemes. The over-quota
11 pricing (\$1.70 discount) in California can be viewed as a 11% penalty at \$15 quota milk prices and it has
12 not stopped new dairies with zero quota from being built. A 65% reduction in penalty volume under
13 FFTF when the maximum penalty is 8% and producers have an opportunity to build their base and avoid
14 future penalties by continuing to market their full production through the period seems inconsistent with
15 those experiences and warrants further discussion.

16 An additional assumption that needs to be better understood in the FFTF analysis is the nature of the
17 reductions in marketings during the penalty periods in the 65% reduction scenario and the assumptions
18 around marketings immediately after those penalty periods. Marketings rebounded quickly after the
19 Dairy Diversion Program of the 1980s as noted earlier. Many producers under contract reduced
20 marketings through adjusted feeding practices or on-farm milk diversions and were fully equipped to
21 resume full marketing levels once they came out from under their contracts.

22 Although the questions around these assumptions may drive the discussion toward altering the FFTF
23 parameters to be more binding, it is important to note the Nicholson and Stephenson response to the
24 question “What are the risks of supply management programs? What are the possible unintended
25 consequences? What are your key data points for cost-benefit analysis—what are the things to look at?
26 You have done a lot of sensitivity analyses. What could go wrong? How do you calculate those
27 probabilities?”:



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 “The supply management programs, as crafted by various industry players, have been careful to
2 attempt to only dampen price volatility with particular emphasis on not altering long-run average
3 prices, maintaining a competitive position in export markets and not creating intangible assets in
4 quota value. But the supply management components of any program provide tools that could be
5 implemented more strongly to enhance prices and confound those goals.”⁴⁸

6 Analysis by Dr. Scott Brown at University of Missouri’s Food and Agricultural Policy Research Institute
7 (FAPRI)⁴⁹ by Dr. Scott Brown concludes that the FFTF would help smooth out the peaks and troughs of
8 milk prices:

9 “The program will in effect reduce high price periods that result after the loss of too many producers from
10 the low margin period. Though demand shocks will still result in price volatility for the industry in the
11 future, the FFTF program will moderate the range of producer margins that would be experienced without
12 the program”

13
14 FAPRI concludes, “The DMSP feature of the FFTF program will provide another lever to help correct
15 times of low margins. The FAPRI baseline has few observations that result in a triggering of the DMSP
16 but, in those periods of low margins, producers will be given a signal that supply adjustments need to
17 occur. The base feature under DMSP will allow for industry expansion as needed to account for demand
18 growth, since the base production level under DMSP is a rolling average of the three most current
19 months.” FAPRI’s findings bring up an important question when analyzing any of the potential policy
20 options: how responsive will producers be to the market and policy signals?

21 FAPRI’s analysis includes both the Dairy Market Stabilization Program and the Dairy Producer Margin
22 Protection Program. FAPRI’s report acknowledges a relationship between the DPMPP and supply
23 control program but does not elaborate on the extent that supply controls help reduce program spending.

⁴⁸ Nicholson, et al. “Responses to Additional Questions Requested by the Dairy Industry Advisory Committee”
December 6, 2010.

⁴⁹ Brown, S. “[Analysis of NMPF’s Foundation for the Future Program](#).” June 2010. FAPRI-MU Report
#05-10



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

1 Additionally, few trade outcomes are presented. The analysis shows an increase in milk powder exports
2 but does not detail trade changes in other product categories.

3
4 While the declines in price volatility are positive outcomes, troubling aspects of these results are net
5 export declines in categories under this program. Milk price recovery in 2010 has been significantly
6 helped by export markets, as the U.S. is now exporting nearly 12 percent of all production on a solids
7 basis.⁵⁰ Some believe that the Dairy Price Support Program has held the U.S. back from exporting
8 products for decades. The fact that FFTF shows net export declines from current programs, including the
9 DPPSP, could jeopardize the U.S. dairy industry's ability to become a consistent exporter.

10
11 Since both FAPRI and the Nicholson/Stephenson studies analyzed Foundation for the Future as a
12 comprehensive program, it is difficult to discern which policy levers are actually driving the model
13 changes – the margin protection program or the supply control program. Disaggregated analyses would
14 be instructive to the committee.

15 **Other Considerations Regarding Supply Management**

16 The subcommittee identified the following potential concerns about supply management in its September
17 report.

- 18 ➤ Stifling investment in processing and manufacturing plants and new product development due to
19 uncertainty of production levels.
- 20 ➤ Potential to retard development of milk supplies in regions that are deficit, even if supply and
21 demand conditions support development of additional milk supplies in that region.
- 22 ➤ Potential that proposals will introduce increased volatility if intervention lags result in corrective
23 action occurring concurrently with or subsequent to market correction.

⁵⁰ USDEC Estimate, Jan – Jul 2010.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

- Devaluation of livestock by decreasing cattle demand due to reductions in expansion cattle market.
- Inhibiting the farmers' ability to manage risk by increasing production when needed.
- The potential of increasing imports and decreasing exports.
- The potential to incent market disruptive behaviors at the end of measurement periods, such as:
 - Dumping skim
 - Moving cows
 - Reduced marketings
- The unintended consequence of driving a race for the base mentality, incenting producers to increase production during periods in which penalties are not incurred.
- The potential that supply management inhibits growth of dairies to the scale necessary to address environmental and global competitiveness requirements.
- The potential that supply management may increase volatility by forcing greater uniformity in production decision making than exists today.
- Taken as a whole, the subcommittee is concerned that supply management is 180 degrees in the opposite direction of the growth-driven strategies that most industries undertake to create a dynamic and thriving industry.

These remain issues that are worthy of further discussion.

Milk Pricing Policy

The existence of multiple classes for milk used in manufacturing and the pooling and redistribution of the revenue in the Federal Milk Marketing Orders and in most state-administered milk pricing systems mutes the economic signals that otherwise would incent milk to move to the highest and best use. The stifling of market signals that otherwise would pull milk into products in short supply increases price volatility for individual dairy products. Additionally, the use of the "higher of" construct to move Class I prices limits Class I processors' ability to manage price risk. These issues warrant an in-depth review; however, the complexity and scope of that review justifies the establishment of a separate expert panel for that review.



**US Department of Agriculture
Dairy Industry Advisory Committee**

**Subcommittee C
First Draft**

Summary

Volatility is of concern throughout the dairy industry. The volatility of concern is frequent unpredictable fluctuations in prices that result in detrimental impacts on margins in the supply and demand chain, including producers, manufacturers and fluid processors, marketers (retailers, food service establishments, and food manufacturers) and consumers. Stress at the farm level is related to margin volatility. Price volatility significantly impacts formulation and consumption decisions downstream in the marketing chain.

Volatility will continue to be a factor in the dairy markets due to several factors. These include the biological nature of the production systems, the stickiness in supply and demand adjustments, interplay with international markets, and budgetary considerations that constrain the implementation of price supports at levels that significantly reduce volatility. Therefore, full consideration should be given to managing the risks associated with price volatility through market-based and/or public policy solutions.

The subcommittee appreciates the full committee's consideration of the recommendations and considerations contained in this report and looks forward to discussions with the full committee.